



STIC Search Report

EIC 1700

STIC Database Tracking Number: 173887

TO: Gregg Cantelmo
Location: REM 6B71
Art Unit : QAS
December 12, 2005

Case Serial Number: 10/038782

From: Les Henderson
Location: EIC 1700
REM 4B28 / 4A30
Phone: 571-272-2538

Leslie.henderson@uspto.gov

Search Notes



STIC Search Results Feedback Form

EIC17000

Questions about the scope or the results of the search? Contact *the EIC searcher* or contact:

Kathleen Fuller, EIC 1700 Team Leader
571/272-2505 REMSEN 4B28

Voluntary Results Feedback Form

- I am an examiner in Workgroup: Example: 1713
➤ Relevant prior art **found**, search results used as follows:

- ☐ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
(journal articles, conference proceedings, new product announcements etc.)

- Relevant prior art **not found**:

- ☐ Results verified the lack of relevant prior art (helped determine patentability).
- ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

Drop off or send completed forms to EIC1700 REMSEN 4B28

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Gregg Cantelmo Examiner #: 75777 Date: _____
Art Unit: 1745 Phone Number 30 Serial Number: 10/038,782
Mail Box and Bldg/Room Location: Ken 637 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: _____

Inventors (please provide full names): _____

Earliest Priority Filing Date: _____

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

STAFF USE ONLY

	Type of Search	Vendors and cost where applicable
Searcher: <u>294</u>	NA Sequence (#) _____	STN <u>\$ 1720.00</u>
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structure (#) <u>3</u>	Questel/Orbit _____
Date Searcher Picked Up: _____	Bibliographic _____	Dr.Link _____
Date Completed: <u>12/12/05</u>	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: <u>30</u>	Fulltext _____	Sequence Systems _____
Clerical Prep Time: <u>30</u>	Patent Family _____	WWW/Internet _____
Online Time: <u>240</u>	Other _____	Other (specify) _____

Mellerson, Kendra

103887

From: Cantelmo, Gregg
Sent: Saturday, December 10, 2005 1:05 PM
To: STIC-EIC1700
Subject: Database Search Request, Serial Number: 10/038782

Requester:
Gregg Cantelmo (TC1700)
Art Unit:
1745
Employee Number:
75777
Office Location:
REM 6B71
Phone Number:
571-272-1283
Mailbox Number:

Case serial number:
10/038782
Class / Subclass(es):

Earliest Priority Filing Date:

Format preferred for results:

Search Topic Information:

If need be, refer to the specification for particular species for each claimed genus.

Special Instructions and Other Comments:

SCIENTIFIC REFERENCE BR
Sci & Tech Inf. Cntr

DEC 17 REC'D

Pat. & T.M. Office



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Bib Data Sheet

CONFIRMATION NO. 4101

SERIAL NUMBER 10/038,782	FILING DATE 12/31/2001 RULE	CLASS 429	GROUP ART UNIT 1745	ATTORNEY DOCKET NO. OU 3721.1
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APPLICANTS

Roger E. Frech, Norman, OK;
 Daniel T. Glatzhofer, Norman, OK;

** CONTINUING DATA *****
 This appln claims benefit of 60/258,754 12/29/2000

** FOREIGN APPLICATIONS *****

IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** SMALL ENTITY **
 ** 04/01/2002

Foreign Priority claimed 35 USC 119 (a-d) conditions met Verified and Acknowledged	<input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> Met after Allowance Examiner's Signature _____ Initials _____	STATE OR COUNTRY OK	SHEETS DRAWING 3	TOTAL CLAIMS 73	INDEPENDENT CLAIMS 8
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ADDRESS
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 ST LOUIS , MO
 63102

TITLE
 Conductive polyamine-based electrolyte

FILING FEE RECEIVED	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:	<input type="checkbox"/> All Fees
		<input type="checkbox"/> 1.16 Fees (Filing)
		<input type="checkbox"/> 1.17 Fees (Processing Ext. of time)

Express Mail No.
EL 937976323US

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PATENT
OU 3721.1

ABSTRACT OF THE INVENTION

The present invention is directed to a polymer electrolyte comprising amine groups dispersed throughout the polymer backbone, including various poly(ethylenimine)-based polymers, which enable ionic movement for use in various applications, including for example batteries, fuel cells, sensors, supercapacitors and electrochromic devices. The present invention is further directed to a method for preparing such polymer electrolytes.

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"FOFEE" 2828001

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Previously Presented) A covalently cross-linked polymer electrolyte, the polymer electrolyte comprising a polymer backbone containing amine groups, a cross-linker, and a dissolved or dispersed metal salt therein, the cross-linked polymer electrolyte being inert to lithium.

2. (Original) The polymer electrolyte of claim 1 wherein said electrolyte is a continuous film, having a thickness ranging from about 50 to about 1500 microns.

3. (Original) The polymer electrolyte of claim 2 wherein said electrolyte has a specific conductivity of at least about 10^{-4} S/cm at a temperature ranging from about 40°C to about 60°C.

4. (Original) The polymer electrolyte of claim 1 wherein said electrolyte has a specific conductivity of at least about 10^{-4} S/cm at a temperature ranging from about 40°C to about 60°C.

5. (Original) The polymer electrolyte of claim 1 wherein said polymer comprises a linear or branched, substituted or unsubstituted poly(alkylamine).

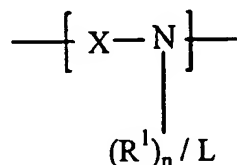
6. (Original) The polymer electrolyte of claim 5 wherein the polymer is branched.

7. (Original) The polymer electrolyte of claim 5 wherein the polymer is linear.

8. (Original) The polymer electrolyte of claim 5 wherein the polymer is selected from substituted or unsubstituted poly(ethylenimine) and substituted or unsubstituted poly(propylenimine).

9. (Original) The polymer electrolyte of claim 8 wherein the polymer is branched poly(ethylenimine).

10. (Previously Presented) The polymer electrolyte of claim 1 wherein the polymer backbone comprises a repeat unit represented by the formula:



wherein: N is nitrogen, which is attached to a substituent, R^1 , or a covalent cross-linker, L; R^1 a substituent free of covalent bonds to the polymer backbone, other than the backbone containing the nitrogen atom to which it is covalently bound, and is independently selected from the group consisting of hydrogen, substituted or unsubstituted hydrocarbyl, and substituted or unsubstituted heterohydrocarbyl; L is a covalent cross-linker connecting N to another polymer chain; X is the remaining portion of the repeat unit and is independently selected from the group consisting of substituted or unsubstituted hydrocarbylene, and substituted or unsubstituted heterohydrocarbylene; and, n is 1 or 2.

11. (Original) The polymer electrolyte of claim 10 wherein said polymer is a copolymer.

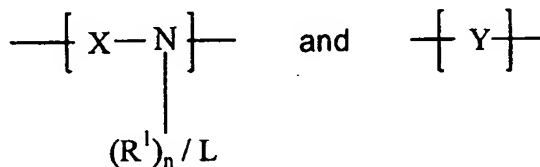
12. (Original) The polymer electrolyte of claim 11 wherein said copolymer has a backbone comprising two or more different repeat units as defined in claim 10.

13. (Original) The polymer electrolyte of claim 12 wherein X is independently selected from methylene, ethylene, propylene, butylene and pentylene.

14. (Original) The polymer electrolyte of claim 13 wherein X is ethylene and propylene, the electrolyte being a copolymer of substituted or unsubstituted, branched or linear poly(ethylenimine) and poly(propylenimine).

15. (Previously Presented) The polymer electrolyte of claim 14, wherein said copolymer is a random copolymer.

16. (Original) The polymer electrolyte of claim 10, wherein the polymer is a copolymer, the copolymer backbone comprising repeat units represented by the formulas:



wherein X, N, R¹, n and L are as defined in claim 10, and Y is independently selected from the group consisting of substituted or unsubstituted hydrocarbylene, and substituted or unsubstituted heterohydrocarbylene.

17. (Original) The polymer electrolyte of claim 16, wherein said copolymer is a random or block copolymer.

18. (Original) The polymer electrolyte of claim 17, wherein Y is selected from substituted or unsubstituted polyethylene, polypropylene, poly(ethylene oxide), poly(propylene oxide), poly(ethylene sulfide), and poly(propylene sulfide).
L62 L56 L58 L60 L65 L63

19. (Original) The polymer electrolyte of claim 1, wherein the polymer is swollen with a solvent.

20. (Previously Presented) The swollen polymer electrolyte of claim 19 wherein the solvent concentration in the electrolyte is less than about 50 weight percent, relative to the total weight of the electrolyte.

21. (Previously Presented) The swollen polymer electrolyte of claim 19 wherein the solvent concentration in the electrolyte is less than about 25 weight percent, relative to the total weight of the electrolyte.

22. (Previously Presented) The swollen polymer electrolyte of claim 19 wherein the solvent concentration in the electrolyte is less than about 10 weight percent, relative to the total weight of the electrolyte.

23. (Original) The swollen polymer electrolyte of claim 19 wherein the swelling solvent is selected from the group consisting of 1,2-dimethoxyethane, methyl formate, 100 dimethylsulfoxide, sulfolane, methyl pyrrolidine, dimethyl formamide, dimethyl acetamide, glymes, nitriles, organic phosphates, organic phosphoramides, carbonates, as well as mixtures thereof. *glyme* 102 103 104 106 107

24. (Original) The swollen polymer electrolyte of claim 23 wherein the swelling solvent is a glyme selected from the group consisting of monoglyme, diglyme, triglyme, tetraglyme, or a mixture thereof. 110 102 109 111

25. (Original) The swollen polymer electrolyte of claim 19 wherein the swelling solvent is a plasticizer.

26. (Original) The swollen polymer electrolyte of claim 25 wherein the plasticizing solvent is selected from the group consisting of esters, diesters, carbonates, phosphates, acrylates, borates, sulfolanes, sulphates and glymes.

27. (Previously Presented) The swollen polymer electrolyte of claim 26 wherein the plasticizing solvent is 2-(2-ethoxyethoxy)ethyl acetate. 112

28. (Previously Presented) The swollen polymer electrolyte of claim 26 wherein the plasticizing solvent is dimethyl adipate or dibutyl phthalate. 113 114

29. (Previously Presented) The swollen polymer electrolyte of claim 26 wherein the plasticizing solvent is propylene carbonate. 115

30. (Original) The polymer electrolyte of claim 1, wherein the polymer is an elastomer.

31. (Original) The polymer electrolyte of claim 1 wherein a nitrogen of one or more amine groups in a first polymer backbone are covalently cross-linked to amine groups in a second polymer backbone.

32. (Original) The polymer electrolyte of claim 1 wherein the metal salt is selected from the group consisting of transition metals, alkali metals, alkaline earth metals, or a combination thereof.

33. (Original) The polymer electrolyte of claim 32 wherein the metal salt is a transition metal salt selected from the group consisting of Ni, Cu, Ru or Ag. L11688 on L132

34. (Original) The polymer electrolyte of claim 33 wherein the metal salt is a alkali metal salt selected from the group consisting of Li, Na, K, Rb or Cs.

35. (Original) The polymer electrolyte of claim 34 wherein the metal salt is a Li metal salt selected from the group consisting of LiSCN, LiPF₆, LiAsF₆, LiClO₄, LiN(CF₃SO₂)₂, LiBF₄, LiCF₃SO₃, LiSbF₆, or a combination thereof.

36. (Original) The polymer electrolyte of claim 33 wherein the metal salt is a alkaline earth metal salt selected from the group consisting of Mg, Ca or Sr. L130

37. (Original) The polymer electrolyte of claim 1 wherein the polymer has a ratio of secondary to tertiary nitrogen atoms ranging from about 5:1 to about 25:1.

all L131

38. (Original) The polymer electrolyte of claim 1 wherein the polymer has a ratio of secondary to tertiary nitrogen atoms ranging from about 10:1 to about 20:1.

39. (Original) The polymer electrolyte of claim 1 wherein the polymer has a ratio of heteroatoms to metal ions ranging from about 20:1 to about 4:1.

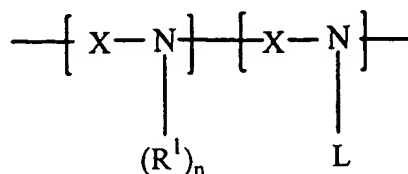
40. (Currently Amended) A covalently cross-linked polymer electrolyte, the polymer electrolyte comprising a polymer backbone containing amine groups, a cross-linker, and one or more solvent moieties covalently bound ~~thereto~~ to (i) said polymer backbone, (ii) a substituent or side chain of said polymer backbone, or (iii) said cross-linker.

41. (Original) The polymer electrolyte of claim 40 wherein the polymer comprises a linear or branched, substituted or unsubstituted poly(alkylamine).

42. (Original) The polymer electrolyte of claim 41 wherein the polymer is poly(ethylenimine) or poly(propylenimine).

43. (Original) The polymer electrolyte of claim 40 wherein one or more of the solvent moieties are bound to amine group nitrogen atoms.

44. (Previously Presented) The polymer electrolyte of claim 43 wherein the polymer comprises a repeat unit of the formula:



wherein: n is 1 or 2; R¹ is (i) free of covalent bonds to the polymer backbone other than the backbone containing the nitrogen atom to which it is covalently bound, and (ii) is a substituted or unsubstituted heterohydrocarbyl solvent moiety derived from a glyme, a furan, an amide, an alkylsulfoxide, a sulfolane, a nitrile or a carbonate; L is a covalent

cross-linker connecting N to another polymer chain; and X is independently selected from the group consisting of substituted or unsubstituted hydrocarbylene, and substituted or unsubstituted heterohydrocarbylene.

45. (Original) The polymer electrolyte of claim 44 wherein R¹ is a solvent moiety derived from tetrahydrofuran, dimethylformamide, dimethylacetamide, N-methylpyrrolidone, dimethylsulfoxide, sulfolane, acetonitrile and propylene carbonate.

46. (Previously Presented) The polymer electrolyte of claim 44 wherein R¹ is a heterohydrocarbyl solvent moiety having the formula -O(CH₂CH₂O)_bCH₃, wherein b ranges from about 1 to 6.

47. (Original) The polymer electrolyte of claim 40 wherein the polymer further comprises a metal salt.

48. (Original) The polymer electrolyte of claim 47 wherein the metal salt is selected from the group consisting of transition metals, alkali metals, alkaline earth metals, or a combination thereof.

49. (Previously Presented) A covalently cross-linked polymer electrolyte, the polymer electrolyte comprising a polymer backbone containing amine groups, a cross-linker, and labile protons therein in the absence of a protic solvent.

50. (Original) The polymer electrolyte of claim 49 wherein a ratio of protons to nitrogen atoms ranges from about 0.2:1 to about 0.8:1.

51. (Currently Amended) The polymer electrolyte of claim 49 wherein the polymer ~~is swollen with a protic solvent~~ comprises a linear or branched, substituted or unsubstituted poly(ethylenimine).

52. (Currently Amended) The ~~swollen~~ polymer electrolyte of claim 51 wherein ~~the swelling solvent is selected from the group consisting of water, triflic acid, acetic acid, phosphoric acid, and mixtures thereof~~ cross-linker is derived from malonaldehyde.

53. (Previously Presented) A fuel cell comprising:
a proton-conducting, covalently cross-linked polymer electrolyte membrane, the polymer comprising a polymer backbone containing amine groups, a cross-linker, and labile protons therein in the absence of a protic solvent;
an anode in contact with a first side of the membrane; and,
a cathode in contact with a second side of the membrane, which is opposite said first side.

54. (Original) The fuel cell of claim 53 wherein the polymer electrolyte is a linear or branched, substituted or unsubstituted poly(alkylamine).

55. (Original) The fuel cell of claim 54 wherein the polymer electrolyte is a substituted or unsubstituted, branched poly(ethylenimine) or poly(propylenimine).

56. (Original) The fuel cell of claim 54 wherein the polymer electrolyte is a substituted or unsubstituted, linear poly(ethylenimine) or poly(propylenimine).

57. (Previously Presented) A battery comprising a negative electrode, a positive electrode, and an ionically conductive polymer electrolyte disposed there between and in contact therewith, wherein said polymer electrolyte is covalently cross-linked and comprises a polymer backbone containing amine groups, a cross-linker, and a dissolved or dispersed metal salt, the cross-linked polymer electrolyte being inert to lithium.

58. (Original) The battery of claim 57 wherein the polymer electrolyte is a linear or branched, substituted or unsubstituted poly(alkylamine).

59. (Original) The battery of claim 58 wherein the polymer electrolyte is a substituted or unsubstituted, branched poly(ethylenimine) or poly(propylenimine).

60. (Original) The battery of claim 58 wherein the polymer electrolyte is a substituted or unsubstituted, linear poly(ethylenimine) or poly(propylenimine).

61. (Currently Amended) A gradient battery comprising:
metal ions;
a negative electrode comprising a cross-linked poly(amine);
a positive electrode comprising a cross-linked poly(amine); and,
an electrolyte comprising a cross-linked poly(amine) disposed between said
negative and positive electrodes which, during charge or discharge of the battery,
enable the passage of metal ions or protons from one electrode to the other;
wherein said negative electrode, positive electrode and electrolyte are regions
within a continuous, covalently cross-linked poly(amine) film, ~~the polymer film~~
~~comprising metal ions, a negative electrode region, a positive electrode region, and an~~
~~electrolyte region disposed there between which, during charge or discharge of the~~
~~battery, enable the passage of metal ions or protons from one electrode to the other.~~

62. (Original) The battery of claim 61 wherein the polymer electrolyte is a linear or branched, substituted or unsubstituted poly(alkylamine).

63. (Original) The battery of claim 62 wherein the polymer electrolyte is a substituted or unsubstituted, branched poly(ethylenimine) or poly(propylenimine).

64. (Original) The battery of claim 62 wherein the polymer electrolyte is a substituted or unsubstituted, linear poly(ethylenimine) or poly(propylenimine).

65. (Previously Presented) The battery of claim 62 wherein the electrolyte is a covalently cross-linked polymer single ion electrolyte, the polymer electrolyte comprising a polymer backbone containing amine groups, a cross-linker, and an ion

pair, one member of the pair being covalently attached to the polymer backbone and the other being capable of diffusing through the polymer electrolyte upon the application of an electric field.

66. (Previously Presented) A covalently cross-linked polymer single ion electrolyte, the polymer electrolyte comprising a polymer backbone containing amine groups, a cross-linker, and an ion pair, one member of the pair being covalently attached to the polymer backbone and the other being capable of diffusing through the polymer electrolyte upon the application of an electric field.

67. (Original) The single ion electrolyte of claim 66 wherein the polymer is a linear or branched, substituted or unsubstituted poly(alkylamine).

68. (Original) The single ion electrolyte of claim 67 wherein the polymer is a substituted or unsubstituted, branched poly(ethylenimine) or poly(propylenimine).

69. (Original) The single ion electrolyte of claim 67 wherein the polymer electrolyte is a substituted or unsubstituted, linear poly(ethylenimine) or poly(propylenimine).

70. (Previously Presented) An electrolytic cell comprising:

an anode,

a cathode, and

a covalently cross-linked polymer single ion electrolyte, the polymer electrolyte comprising a polymer backbone containing amine groups, a cross-linker, and an ion pair, one member of the pair being covalently attached to the polymer backbone and the other being capable of diffusing through the polymer electrolyte upon the application of an electric field.

71. (Original) The electrolytic cell of claim 70 wherein the polymer is a linear or branched, substituted or unsubstituted poly(alkylamine).

72. (Original) The electrolytic cell of claim 71 wherein the polymer is a substituted or unsubstituted, branched poly(ethylenimine) or poly(propylenimine).

73. (Original) The electrolytic cell of claim 71 wherein the polymer electrolyte is a substituted or unsubstituted, linear poly(ethylenimine) or poly(propylenimine).

74. (Previously Presented) The polymer electrolyte of claim 1 wherein the cross-linker is derived from a difunctional alkyl or a difunctional alkylarene compound.

75. (Previously Presented) The polymer electrolyte of claim 74 wherein the cross-linker is selected from 1,3-dibromopropane, 1,3-diiodohexane, 1,6-dibromohexane, 1,2-dichloroethane, di(bromomethyl)benzenes, and 1,7-heptanediol ditosylate.

76. (Previously Presented) The polymer electrolyte of claim 57 wherein the cross-linker is derived from a difunctional alkyl or a difunctional alkylarene compound.

77. (Previously Presented) The polymer electrolyte of claim 76 wherein the cross-linker is selected from 1,3-dibromopropane, 1,3-diiodohexane, 1,6-dibromohexane, 1,2-dichloroethane, di(bromomethyl)benzenes, and 1,7-heptanediol ditosylate.

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(FILE 'HOME' ENTERED AT 08:27:26 ON 12 DEC 2005)

FILE 'HCAPLUS' ENTERED AT 08:28:11 ON 12 DEC 2005

E US20020160271/PN

L1 1 SEA ABB=ON PLU=ON US20020160271/PN
D ALL
SEL RN

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L4 8 SEA ABB=ON PLU=ON L2 AND L3
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D QUE STAT

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L27 41337 SEA ABB=ON PLU=ON L13 AND L24

L28 9 SEA ABB=ON PLU=ON 1/L1 AND L2

D SCAN

D L28 1-9 RN

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FILE 'HCAPLUS' ENTERED AT 11:03:26 ON 12 DEC 2005

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L57 1 SEA ABB=ON PLU=ON POLYPROPYLENE/CN
D RN
L58 1 SEA ABB=ON PLU=ON 9003-07-0/RN
E POLY(ETHYLENE OXIDE)/CN
E POLYETHYLENEOXIDE/CN
E ETHYLENE OXIDE/CN
E ETHYLENE OXIDE, HOMOPOLYMER/CN
L59 1 SEA ABB=ON PLU=ON ETHYLENE OXIDE, HOMOPOLYMER/CN
D RN
E 25322-68-3/RN
L60 1 SEA ABB=ON PLU=ON 25322-68-3/RN
D SCAN
E PROPYLENE OXIDE, HOMOPOLYMER/CN
E POLYPROPYLENE OXIDE/CN
E PROPYLENE OXIDE, POLYMER/CN
E PROPYLENE OXIDE/CN
E PROPYLENE OXIDE HOMOPOLYMER/CN
L61 1 SEA ABB=ON PLU=ON PROPYLENE OXIDE HOMOPOLYMER/CN

D RN
 L62 1 SEA ABB=ON PLU=ON 25322-69-4/RN
 D SCAN
 L63 1 SEA ABB=ON PLU=ON PROPYLENE SULFIDE HOMOPOLYMER/CN
 D SCAN
 D CN
 D RN
 L64 1 SEA ABB=ON PLU=ON 25037-97-2/RN
 D SCAN
 E ETHYLENE SULFIDE HOMOPOLYMER/CN
 E ETHYLENE SULFIDE POLYMER/CN
 L65 1 SEA ABB=ON PLU=ON ETHYLENE SULFIDE POLYMER/CN
 D SCAN
 D RN
 L66 1 SEA ABB=ON PLU=ON 24980-34-5/RN
 D SCAN

FILE 'HCAPLUS' ENTERED AT 11:32:50 ON 12 DEC 2005

FILE 'REGISTRY' ENTERED AT 11:33:55 ON 12 DEC 2005
 D SCAN L5

FILE 'HCAPLUS' ENTERED AT 11:33:55 ON 12 DEC 2005

L67 1367 SEA ABB=ON PLU=ON L5
 L68 4969 SEA ABB=ON PLU=ON L67 OR POLYETHYLENEIMINE OR
 ETHYLENEIMINE(A) (POLY OR POLYM? OR HOMOPOLYM?)
 L69 102927 SEA ABB=ON PLU=ON L58
 L70 176257 SEA ABB=ON PLU=ON L58 OR POLYPROPYLENE OR PROPYLENE(A)
) (POLY OR POLYM? OR HOMOPOLYM?)
 L71 175938 SEA ABB=ON PLU=ON L56
 L72 415848 SEA ABB=ON PLU=ON L71 OR POLYETHYLENE OR ETHYLENE(A) (POLY OR POLYM? OR HOMOPOLYM?)
 L73 86109 SEA ABB=ON PLU=ON L60
 L74 97759 SEA ABB=ON PLU=ON L73 OR POLYETHYLENEOXIDE OR
 POLYETHYLENE(A)OXIDE OR (ETHYLENE(A)OXIDE) (2A) (POLY OR
 POLYM? OR HOMOPOLYM?)
 L75 14622 SEA ABB=ON PLU=ON L62
 L76 20064 SEA ABB=ON PLU=ON L75 OR POLYPROPYLENEOXIDE OR
 POLYPROPYLENE(A)OXIDE OR (PROPYLENE(A)OXIDE) (2A) (POLY
 OR POLYM? OR HOMOPOLYM?)
 L77 172 SEA ABB=ON PLU=ON L66
 L78 478 SEA ABB=ON PLU=ON L77 OR POLYETHYLENESULFIDE OR
 POLYETHYLENE(A)SULFIDE OR (ETHYLENE(A)SULFIDE) (2A) (POLY
 OR POLYM? OR HOMOPOLYM?)
 L79 291 SEA ABB=ON PLU=ON L64
 L80 455 SEA ABB=ON PLU=ON L79 OR POLYPROPYLENESULFIDE OR
 POLYPROPYLENE(A)SULFIDE OR (PROPYLENE(A)SULFIDE) (2A) (POLY
 OR POLYM? OR HOMOPOLYM?)
 L81 46 SEA ABB=ON PLU=ON L54
 L82 404 SEA ABB=ON PLU=ON L81 OR POLYPROPYLENEIMINE OR
 PROPYLENEIMINE(A) (POLY OR POLYM? OR HOMOPOLYM?)
 L83 5325 SEA ABB=ON PLU=ON L82 OR L68
 L84 548708 SEA ABB=ON PLU=ON L70 OR L72 OR L74 OR L76 OR L78 OR
 L80
 L85 1190 SEA ABB=ON PLU=ON L84 AND L83
 L86 8176 SEA ABB=ON PLU=ON L19 AND L84

L87 34 SEA ABB=ON PLU=ON L49 AND L85
 L88 242 SEA ABB=ON PLU=ON L49 AND L86
 L89 286196 SEA ABB=ON PLU=ON CROSS(W) LINK? OR CROSSLINK?
 L90 4 SEA ABB=ON PLU=ON L89 AND L87
 L91 32 SEA ABB=ON PLU=ON L89 AND L88
 L92 QUE ABB=ON PLU=ON POLYMER## OR HOMOPOLYMER## OR
 COPOLYMER## OR TERPOLYMER## OR RESIN? OR GUM? OR
 POLYM?
 L93 537 SEA ABB=ON PLU=ON L89 (3A) L92 (3A) ELECTROLYTE
 E ELECTROLYTE/CT
 E ELECTROLYTES/CT
 E E3+ALL
 L94 2 SEA ABB=ON PLU=ON L93 AND L91
 L95 1 SEA ABB=ON PLU=ON L93 AND L90
 L96 1 SEA ABB=ON PLU=ON L93 AND L87
 L97 2 SEA ABB=ON PLU=ON L93 AND L88
 L98 5 SEA ABB=ON PLU=ON L90 OR (L94 OR L95 OR L96 OR L97)
 L99 3719 SEA ABB=ON PLU=ON SWELL? (2A) SOLVENT

FILE 'REGISTRY' ENTERED AT 12:10:56 ON 12 DEC 2005.

E 67-68-5/RN
 L100 1 SEA ABB=ON PLU=ON 67-68-5/RN
 D SCAN
 D CN
 E 6-12-2/RN
 E 68-12-2/RN
 L101 1 SEA ABB=ON PLU=ON 68-12-2/RN
 D CN
 E 110-71-4/RN
 L102 1 SEA ABB=ON PLU=ON 110-71-4/RN
 D CN
 E 107-31-3/RN
 L103 1 SEA ABB=ON PLU=ON 107-31-3/RN
 D CN
 E 126-33-0/RN
 L104 1 SEA ABB=ON PLU=ON 126-33-0/RN
 D SCAN
 E METHYL PYRROLIDINE/CN
 E PYRROLIDINE/CN
 E PYRROLIDINE, METHYL/CN
 E PYRROLIDINE, METHYL-/CN
 L105 1 SEA ABB=ON PLU=ON PYRROLIDINE, METHYL-/CN
 D SCAN
 D RN
 L106 1 SEA ABB=ON PLU=ON 71607-58-4/RN
 D SCAN
 E 127-19-5/RN
 L107 1 SEA ABB=ON PLU=ON 127-19-5/RN
 D SCAN
 E 872-50-4/RN
 L108 1 SEA ABB=ON PLU=ON 872-50-4/RN
 D SCAN
 E 111-96-6/RN
 L109 1 SEA ABB=ON PLU=ON 111-96-6/RN
 D SCAN
 E 112-49-2/RN

L110 1 SEA ABB=ON PLU=ON 112-49-2/RN
 D SCAN
 D CN
 E 143-24-8/RN
 L111 1 SEA ABB=ON PLU=ON 143-24-8/RN
 D SCAN
 D CN
 E 112-15-2/RN
 L112 1 SEA ABB=ON PLU=ON 112-15-2/RN
 D SCAN
 D CN
 E 627-93-0/RN
 L113 1 SEA ABB=ON PLU=ON 627-93-0/RN
 D CN
 D SCAN
 E 84-74-2/RN
 L114 1 SEA ABB=ON PLU=ON 84-74-2/RN
 D CN
 D SCAN
 E 108-32-7/RN
 L115 1 SEA ABB=ON PLU=ON 108-32-7/RN
 D CN
 D SCAN
 L116 1053643 SEA ABB=ON PLU=ON (NI OR CU OR RU OR AG)/ELS
 L117 5 SEA ABB=ON PLU=ON L116 AND L2
 D SCAN
 D L117 1-5 RN
 L118 1 SEA ABB=ON PLU=ON 7447-39-4/RN
 L119 1 SEA ABB=ON PLU=ON 7440-22-4/RN
 L120 1 SEA ABB=ON PLU=ON 7440-18-8/RN
 L121 1 SEA ABB=ON PLU=ON 7440-02-0/RN
 L122 1 SEA ABB=ON PLU=ON 7440-50-8/RN
 L123 26182 SEA ABB=ON PLU=ON L116 AND (SALT? OR ION? OR CATION?
 OR ANION?)
 L124 590489 SEA ABB=ON PLU=ON (LI OR NA OR K OR RB OR AG)/ELS
 L125 14 SEA ABB=ON PLU=ON L124 AND L2
 L126 5 SEA ABB=ON PLU=ON L125 NOT L28
 D SCAN
 L127 322808 SEA ABB=ON PLU=ON L124 AND (SALT? OR ION? OR
 CATION?)
 L128 14011 SEA ABB=ON PLU=ON L124 (L) 2/ELC.SUB
 L129 1399 SEA ABB=ON PLU=ON ((LI OR NA OR K OR RB OR AG) (L) X)/E
 LS (L) 2/ELC.SUB
 L130 292 SEA ABB=ON PLU=ON ((MG OR CA OR SR) (L) X)/ELS (L) 2/ELC.
 SUB
 L131 3275 SEA ABB=ON PLU=ON (NI OR CU OR RU OR AG OR LI OR NA
 OR K OR RB OR AG OR MG OR CA OR SR)/ELS (L) 1/ELC.SUB
 L132 838 SEA ABB=ON PLU=ON ((NI OR CU OR RU OR AG) (L) X)/ELS (L)
 2/ELC.SUB

FILE 'HCAPLUS' ENTERED AT 13:05:51 ON 12 DEC 2005

L133 57038 SEA ABB=ON PLU=ON L100 OR DMSO
 L134 5147 SEA ABB=ON PLU=ON L103 OR METHYL(A) FORMATE
 L135 5923 SEA ABB=ON PLU=ON L104 OR SULFOLANE
 L136 437 SEA ABB=ON PLU=ON L106 OR METHYL(A) PYRROLIDINE
 L137 96479 SEA ABB=ON PLU=ON L101 OR DIMETHYL(A) FORMAMIDE OR

DMF

L138 15399 SEA ABB=ON PLU=ON L107 OR DIMETHYL(A)ACETAMIDE OR DMA
D QUE L86

L139 161985 SEA ABB=ON PLU=ON (L133 OR L134 OR L135 OR L136 OR L137 OR L138)

L140 203 SEA ABB=ON PLU=ON L86 AND L139
D QUE L131

L141 441366 SEA ABB=ON PLU=ON L131 AND (SALT? OR ION OR CATION OR ANION OR ELECTROLYTE)

L142 20 SEA ABB=ON PLU=ON L141 AND L140
D QUE L132
D QUE L128
D QUE L129
D QUE L130
D QUE L131

L143 488995 SEA ABB=ON PLU=ON (L128 OR L129 OR L130) OR L132

L144 1582006 SEA ABB=ON PLU=ON L131

L145 39442 SEA ABB=ON PLU=ON L144 (2A) (SALT OR ION OR CATION OR ELECTROLYTE)

L146 34 SEA ABB=ON PLU=ON L143 AND L140

L147 4 SEA ABB=ON PLU=ON L145 AND L140

L148 44 SEA ABB=ON PLU=ON L142 OR L146 OR L147

L149 8 SEA ABB=ON PLU=ON L147 OR L98

L150 5176 SEA ABB=ON PLU=ON L102 OR MONOGLYME

L151 5552 SEA ABB=ON PLU=ON L109 OR DIGLYME

L152 1501 SEA ABB=ON PLU=ON L110 OR TRIGLYME

L153 1928 SEA ABB=ON PLU=ON L111 OR TETRAGLYME

L154 926 SEA ABB=ON PLU=ON GLYME

L155 11569 SEA ABB=ON PLU=ON (L150 OR L151 OR L152 OR L153) OR GLYME (A) (MONO OR DI OR TRI OR TETRA)

L156 19 SEA ABB=ON PLU=ON L155 AND L148

L157 12052 SEA ABB=ON PLU=ON L155 OR L154

L158 63 SEA ABB=ON PLU=ON L157 AND L86

L159 35 SEA ABB=ON PLU=ON L158 AND (L141 OR L143 OR L145)

L160 1170 SEA ABB=ON PLU=ON PLASTIC? (A) SOLVENT?

L161 893 SEA ABB=ON PLU=ON PLASTICI? (A) SOLVENT?

L162 2 SEA ABB=ON PLU=ON L161 AND L86

L163 7 SEA ABB=ON PLU=ON L99 AND L86

L164 405 SEA ABB=ON PLU=ON L112

L165 1546 SEA ABB=ON PLU=ON L113 OR DIMETHYL(A)ADIPATE

L166 13589 SEA ABB=ON PLU=ON L114 OR DIBUTYL(A)PHTHALATE

L167 15360 SEA ABB=ON PLU=ON L115 OR PROPYLENE(A)CARBONATE

L168 30612 SEA ABB=ON PLU=ON (L164 OR L165 OR L166 OR L167)

L169 136 SEA ABB=ON PLU=ON L168 AND L86

L170 73 SEA ABB=ON PLU=ON L169 AND (L141 OR L143 OR L145 OR L49 OR L125)
D QUE

L171 1 SEA ABB=ON PLU=ON L170 AND L93

L172 3 SEA ABB=ON PLU=ON L170 AND L89

L173 73 SEA ABB=ON PLU=ON L170 AND (L168 OR L161 OR L157 OR L139)

L174 73 SEA ABB=ON PLU=ON L170 AND L168

L175 1 SEA ABB=ON PLU=ON L170 AND L161

L176 26 SEA ABB=ON PLU=ON L170 AND L157

L177 25 SEA ABB=ON PLU=ON L170 AND L139

L178 34 SEA ABB=ON PLU=ON L171 OR L172 OR L175 OR L176 OR
 L177
 L179 3 SEA ABB=ON PLU=ON L174 AND L89
 L180 21939 SEA ABB=ON PLU=ON L92(2A)ELECTROLYT?
 L181 34 SEA ABB=ON PLU=ON L180 AND L174
 L182 50 SEA ABB=ON PLU=ON L178 OR L179 OR L181
 L183 3 SEA ABB=ON PLU=ON L89 AND L182
 L184 1 SEA ABB=ON PLU=ON L182 AND L93
 L185 34 SEA ABB=ON PLU=ON L178 OR L179 OR L183 OR L184
 L186 217974 SEA ABB=ON PLU=ON METAL(A) (TRANSITION? OR ALKALAI OR
 ALKALINE(A) EARTH)
 L187 28466 SEA ABB=ON PLU=ON L186(2A) (SALT OR CATION OR ION OR
 ELECTROLYTE)
 L188 45 SEA ABB=ON PLU=ON L187 AND L86
 L189 1 SEA ABB=ON PLU=ON L188 AND L93
 L190 15 SEA ABB=ON PLU=ON L188 AND L89

FILE 'REGISTRY' ENTERED AT 13:50:50 ON 12 DEC 2005

E MALONALDEHYDE?CN
 E MALON ALDEHYDE?CN
 E MALONALDEHYDE/CN
 L191 1 SEA ABB=ON PLU=ON MALONALDEHYDE/CN
 D CN
 D RN
 L192 1 SEA ABB=ON PLU=ON 542-78-9/RN
 D SCAN

FILE 'HCAPLUS' ENTERED AT 13:54:26 ON 12 DEC 2005

L193 7087 SEA ABB=ON PLU=ON L192
 L194 9135 SEA ABB=ON PLU=ON L193 OR MALONALDEHYDE OR (MALON
 OR MALONIC) (A) (?ALDEHYDE)
 L195 0 SEA ABB=ON PLU=ON L188 AND L194
 L196 1 SEA ABB=ON PLU=ON L94 AND L174
 L197 0 SEA ABB=ON PLU=ON L170 AND L194
 L198 4 SEA ABB=ON PLU=ON L86 AND L194
 L199 QUE ABB=ON PLU=ON FUELCELL? OR BATTERY? OR BATTERIES?
 OR (FUEL? OR ELECTROCHEM? OR ELECTRO(W)CHEM? OR
 GALVAN? OR ELECTROLY? OR SECONDAR? OR PRIMAR?) (2A)CELL?
 OR FC OR SOFC OR DFC OR PEMFC
 L200 QUE ABB=ON PLU=ON CATHOD? OR ANOD? OR ANOD?
 D QUE L199
 L201 1662 SEA ABB=ON PLU=ON L19 AND L199
 L202 2034 SEA ABB=ON PLU=ON L19 AND L200
 L203 22 SEA ABB=ON PLU=ON L149 OR L162 OR L163 OR L171 OR
 L172 OR L175 OR L179 OR L183 OR L184 OR L189 OR L196
 OR L198
 L204 171 SEA ABB=ON PLU=ON L87 OR L91 OR L142 OR L146 OR L148
 OR L156 OR L158 OR L159 OR L170
 L205 114 SEA ABB=ON PLU=ON L173 OR L174 OR (L176 OR L177 OR
 L178) OR L181 OR L182 OR L185 OR L188 OR L190
 L206 214 SEA ABB=ON PLU=ON (L203 OR L204 OR L205)
 L207 87 SEA ABB=ON PLU=ON L206 AND L199
 L208 44 SEA ABB=ON PLU=ON L207 AND L200
 L209 12459 SEA ABB=ON PLU=ON ELECTROLY? (2A)MEMBRAN?
 L210 5 SEA ABB=ON PLU=ON L209 AND L206
 L211 2 SEA ABB=ON PLU=ON L209 AND L207

L212 2 SEA ABB=ON PLU=ON L209 AND L208
 L213 5 SEA ABB=ON PLU=ON (L210 OR L211 OR L212)
 L214 47 SEA ABB=ON PLU=ON L213 OR L208
 L215 67 SEA ABB=ON PLU=ON L214 OR L203
 L216 45 SEA ABB=ON PLU=ON L215 NOT L203
 L217 1 SEA ABB=ON PLU=ON L215 AND L1
 L218 1 SEA ABB=ON PLU=ON L203 AND L1
 L219 66 SEA ABB=ON PLU=ON L215 AND L19
 L220 12 SEA ABB=ON PLU=ON L219 AND L21
 L221 12 SEA ABB=ON PLU=ON L215 AND L21
 L222 8 SEA ABB=ON PLU=ON L221 AND L203
 L223 4 SEA ABB=ON PLU=ON L221 NOT L222
 L224 26 SEA ABB=ON PLU=ON L203 OR L221
 L225 41 SEA ABB=ON PLU=ON L219 NOT L224
 D QUE L83
 L226 0 SEA ABB=ON PLU=ON L83 AND L225
 L227 8 SEA ABB=ON PLU=ON L83 AND L224

=> => d que stat l224

L2 52 SEA FILE=REGISTRY ABB=ON PLU=ON (7664-38-2/BI OR
 10043-35-3/BI OR 107-13-1/BI OR 107-31-3/BI OR
 108-32-7/BI OR 110-71-4/BI OR 111-96-6/BI OR 112-15-2/B
 I OR 112-49-2/BI OR 1120-71-4/BI OR 126-33-0/BI OR
 127-19-5/BI OR 14283-07-9/BI OR 143-24-8/BI OR
 1493-13-6/BI OR 16024-56-9/BI OR 18424-17-4/BI OR
 21324-40-3/BI OR 26338-45-4/BI OR 26375-28-0/BI OR
 26913-06-4/BI OR 2926-30-9/BI OR 29935-35-1/BI OR
 33454-82-9/BI OR 38796-76-8/BI OR 441353-87-3/BI OR
 441353-88-4/BI OR 441353-89-5/BI OR 441353-97-5/BI OR
 463-79-6/BI OR 556-65-0/BI OR 627-93-0/BI OR 64-19-7/BI
 OR 67-68-5/BI OR 68-12-2/BI OR 7439-93-2/BI OR
 7440-02-0/BI OR 7440-09-7/BI OR 7440-17-7/BI OR
 7440-18-8/BI OR 7440-22-4/BI OR 7440-23-5/BI OR
 7440-46-2/BI OR 7440-50-8/BI OR 7447-39-4/BI OR
 7664-93-9/BI OR 7791-03-9/BI OR 79-10-7/BI OR 84-74-2/B
 I OR 872-50-4/BI OR 9002-98-6/BI OR 90076-65-6/BI)
 L3 41464 SEA FILE=REGISTRY ABB=ON PLU=ON POLYAMINE/PCT
 L5 1 SEA FILE=REGISTRY ABB=ON PLU=ON 26913-06-4/RN
 L6 STR

C-X-N
 1 2

NODE ATTRIBUTES:

NSPEC IS RC AT 1
 NSPEC IS RC AT 2
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 2

STEREO ATTRIBUTES: NONE

L13 41337 SEA FILE=REGISTRY SUB=L3 SSS FUL L6

L15 STR

G1~~X~~N C~~X~~C~~X~~C~~X~~C~~X~~C C @8 C~~X~~C C~~X~~C~~X~~C
 1 2 3 4 5 6 @7 9 @10 11 12 @13

C~~X~~C~~X~~C~~X~~C
 @14 15 16 17

VAR G1=8/10/13/14/7

NODE ATTRIBUTES:

NSPEC IS RC AT 2
 NSPEC IS RC AT 3
 NSPEC IS RC AT 4
 NSPEC IS RC AT 5
 NSPEC IS RC AT 6
 NSPEC IS RC AT 7
 NSPEC IS RC AT 8
 NSPEC IS RC AT 9
 NSPEC IS RC AT 10
 NSPEC IS RC AT 11
 NSPEC IS RC AT 12
 NSPEC IS RC AT 13
 NSPEC IS RC AT 14
 NSPEC IS RC AT 15
 NSPEC IS RC AT 16
 NSPEC IS RC AT 17
 CONNECT IS E2 RC AT 3
 CONNECT IS E2 RC AT 4
 CONNECT IS E2 RC AT 5
 CONNECT IS E2 RC AT 6
 CONNECT IS E2 RC AT 7
 CONNECT IS E2 RC AT 8
 CONNECT IS E2 RC AT 9
 CONNECT IS E2 RC AT 10
 CONNECT IS E2 RC AT 11
 CONNECT IS E2 RC AT 12
 CONNECT IS E2 RC AT 13
 CONNECT IS E2 RC AT 14
 CONNECT IS E2 RC AT 15
 CONNECT IS E2 RC AT 16
 CONNECT IS E2 RC AT 17
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 17

STEREO ATTRIBUTES: NONE

L17 32420 SEA FILE=REGISTRY SUB=L13 SSS FUL L15
 L18 8 SEA FILE=REGISTRY ABB=ON PLU=ON L2 AND L17
 L19 54075 SEA FILE=HCAPLUS ABB=ON PLU=ON L13
 L21 10939 SEA FILE=HCAPLUS ABB=ON PLU=ON L18
 L29 1 SEA FILE=REGISTRY ABB=ON PLU=ON 90076-65-6/RN

L30 1 SEA FILE=REGISTRY ABB=ON PLU=ON 33454-82-9/RN
 L31 1 SEA FILE=REGISTRY ABB=ON PLU=ON 29935-35-1/RN
 L32 1 SEA FILE=REGISTRY ABB=ON PLU=ON 21324-40-3/RN
 L33 1 SEA FILE=REGISTRY ABB=ON PLU=ON 14283-07-9/RN
 L34 1 SEA FILE=REGISTRY ABB=ON PLU=ON 7791-03-9/RN
 L35 1 SEA FILE=REGISTRY ABB=ON PLU=ON 7439-93-2/RN
 L36 1 SEA FILE=REGISTRY ABB=ON PLU=ON 556-65-0/RN
 L37 1 SEA FILE=REGISTRY ABB=ON PLU=ON 18424-17-4/RN
 L39 1977 SEA FILE=HCAPLUS ABB=ON PLU=ON L29
 L40 2574 SEA FILE=HCAPLUS ABB=ON PLU=ON L30
 L41 1430 SEA FILE=HCAPLUS ABB=ON PLU=ON L31
 L42 4580 SEA FILE=HCAPLUS ABB=ON PLU=ON L32
 L43 3104 SEA FILE=HCAPLUS ABB=ON PLU=ON L33
 L44 10316 SEA FILE=HCAPLUS ABB=ON PLU=ON L34
 L45 79492 SEA FILE=HCAPLUS ABB=ON PLU=ON L35
 L46 695 SEA FILE=HCAPLUS ABB=ON PLU=ON L36
 L47 245 SEA FILE=HCAPLUS ABB=ON PLU=ON L37
 L48 93688 SEA FILE=HCAPLUS ABB=ON PLU=ON (L39 OR L40 OR L41 OR
 L42 OR L43 OR L44 OR L45 OR L46 OR L47)
 L49 98993 SEA FILE=HCAPLUS ABB=ON PLU=ON L48 OR LISCN OR LIPF6-
 OR LIASF6 OR LICLO4 OR LIN(A)CF3SO2 OR LIBF4 OR
 LICF3SO3 OR LISBF6
 L54 1 SEA FILE=REGISTRY ABB=ON PLU=ON 32290-92-9/RN
 L56 1 SEA FILE=REGISTRY ABB=ON PLU=ON 9002-88-4/RN
 L58 1 SEA FILE=REGISTRY ABB=ON PLU=ON 9003-07-0/RN
 L60 1 SEA FILE=REGISTRY ABB=ON PLU=ON 25322-68-3/RN
 L62 1 SEA FILE=REGISTRY ABB=ON PLU=ON 25322-69-4/RN
 L64 1 SEA FILE=REGISTRY ABB=ON PLU=ON 25037-97-2/RN
 L66 1 SEA FILE=REGISTRY ABB=ON PLU=ON 24980-34-5/RN
 L67 1367 SEA FILE=HCAPLUS ABB=ON PLU=ON L5
 L68 4969 SEA FILE=HCAPLUS ABB=ON PLU=ON L67 OR POLYETHYLENEIMI
 NE OR ETHYLENEIMINE(A) (POLY OR POLYM? OR HOMOPOLYM?)
 L70 176257 SEA FILE=HCAPLUS ABB=ON PLU=ON L58 OR POLYPROPYLENE
 OR PROPYLENE(A) (POLY OR POLYM? OR HOMOPOLYM?)
 L71 175938 SEA FILE=HCAPLUS ABB=ON PLU=ON L56
 L72 415848 SEA FILE=HCAPLUS ABB=ON PLU=ON L71 OR POLYETHYLENE
 OR ETHYLENE(A) (POLY OR POLYM? OR HOMOPOLYM?)
 L73 86109 SEA FILE=HCAPLUS ABB=ON PLU=ON L60
 L74 97759 SEA FILE=HCAPLUS ABB=ON PLU=ON L73 OR POLYETHYLENEOXI-
 DE OR POLYETHYLENE(A) OXIDE OR (ETHYLENE(A) OXIDE) (2A) (PO
 LY OR POLYM? OR HOMOPOLYM?)
 L75 14622 SEA FILE=HCAPLUS ABB=ON PLU=ON L62
 L76 20064 SEA FILE=HCAPLUS ABB=ON PLU=ON L75 OR POLYPROPYLENEOX-
 IDE OR POLYPROPYLENE(A) OXIDE OR (PROPYLENE(A) OXIDE) (2A)
 (POLY OR POLYM? OR HOMOPOLYM?)
 L77 172 SEA FILE=HCAPLUS ABB=ON PLU=ON L66
 L78 478 SEA FILE=HCAPLUS ABB=ON PLU=ON L77 OR POLYETHYLENESUL
 FIDE OR POLYETHYLENE(A) SULFIDE OR (ETHYLENE(A) SULFIDE) (2A)
 (POLY OR POLYM? OR HOMOPOLYM?)
 L79 291 SEA FILE=HCAPLUS ABB=ON PLU=ON L64
 L80 455 SEA FILE=HCAPLUS ABB=ON PLU=ON L79 OR POLYPROPYLENESU
 LFIDE OR POLYPROPYLENE(A) SULFIDE OR (PROPYLENE(A) SULFID
 E) (2A) (POLY OR POLYM? OR HOMOPOLYM?)
 L81 46 SEA FILE=HCAPLUS ABB=ON PLU=ON L54
 L82 404 SEA FILE=HCAPLUS ABB=ON PLU=ON L81 OR POLYPROPYLENEIM
 INE OR PROPYLENEIMINE(A) (POLY OR POLYM? OR HOMOPOLYM?)

L83	5325	SEA FILE=HCAPLUS ABB=ON	PLU=ON	L82 OR L68
L84	548708	SEA FILE=HCAPLUS ABB=ON	PLU=ON	L70 OR L72 OR L74 OR L76 OR L78 OR L80
L85	1190	SEA FILE=HCAPLUS ABB=ON	PLU=ON	L84 AND L83
L86	8176	SEA FILE=HCAPLUS ABB=ON	PLU=ON	L19 AND L84
L87	34	SEA FILE=HCAPLUS ABB=ON	PLU=ON	L49 AND L85
L88	242	SEA FILE=HCAPLUS ABB=ON	PLU=ON	L49 AND L86
L89	286196	SEA FILE=HCAPLUS ABB=ON	PLU=ON	CROSS(W) LINK? OR CROSSLINK?
L90	4	SEA FILE=HCAPLUS ABB=ON	PLU=ON	L89 AND L87
L91	32	SEA FILE=HCAPLUS ABB=ON	PLU=ON	L89 AND L88
L92		QUE ABB=ON PLU=ON POLYMER## OR HOMOPOLYMER## OR COPO LYMER## OR TERPOLYMER## OR RESIN? OR GUM? OR POLYM?		
L93	537	SEA FILE=HCAPLUS ABB=ON	PLU=ON	L89 (3A) L92 (3A) ELECTROL YTE
L94	2	SEA FILE=HCAPLUS ABB=ON	PLU=ON	L93 AND L91
L95	1	SEA FILE=HCAPLUS ABB=ON	PLU=ON	L93 AND L90
L96	1	SEA FILE=HCAPLUS ABB=ON	PLU=ON	L93 AND L87
L97	2	SEA FILE=HCAPLUS ABB=ON	PLU=ON	L93 AND L88
L98	5	SEA FILE=HCAPLUS ABB=ON	PLU=ON	L90 OR (L94 OR L95 OR L96 OR L97)
L99	3719	SEA FILE=HCAPLUS ABB=ON	PLU=ON	SWELL? (2A) SOLVENT
L100	1	SEA FILE=REGISTRY ABB=ON	PLU=ON	67-68-5/RN
L101	1	SEA FILE=REGISTRY ABB=ON	PLU=ON	68-12-2/RN
L102	1	SEA FILE=REGISTRY ABB=ON	PLU=ON	110-71-4/RN
L103	1	SEA FILE=REGISTRY ABB=ON	PLU=ON	107-31-3/RN
L104	1	SEA FILE=REGISTRY ABB=ON	PLU=ON	126-33-0/RN
L106	1	SEA FILE=REGISTRY ABB=ON	PLU=ON	71607-58-4/RN
L107	1	SEA FILE=REGISTRY ABB=ON	PLU=ON	127-19-5/RN
L109	1	SEA FILE=REGISTRY ABB=ON	PLU=ON	111-96-6/RN
L110	1	SEA FILE=REGISTRY ABB=ON	PLU=ON	112-49-2/RN
L111	1	SEA FILE=REGISTRY ABB=ON	PLU=ON	143-24-8/RN
L112	1	SEA FILE=REGISTRY ABB=ON	PLU=ON	112-15-2/RN
L113	1	SEA FILE=REGISTRY ABB=ON	PLU=ON	627-93-0/RN
L114	1	SEA FILE=REGISTRY ABB=ON	PLU=ON	84-74-2/RN
L115	1	SEA FILE=REGISTRY ABB=ON	PLU=ON	108-32-7/RN
L124	590489	SEA FILE=REGISTRY ABB=ON	PLU=ON	(LI OR NA OR K OR RB OR AG) /ELS
L125	14	SEA FILE=REGISTRY ABB=ON	PLU=ON	L124 AND L2
L128	14011	SEA FILE=REGISTRY ABB=ON	PLU=ON	L124 (L) 2/ELC.SUB
L129	1399	SEA FILE=REGISTRY ABB=ON	PLU=ON	((LI OR NA OR K OR RB OR AG) (L) X) /ELS (L) 2/ELC.SUB
L130	292	SEA FILE=REGISTRY ABB=ON	PLU=ON	((MG OR CA OR SR) (L) X) /ELS (L) 2/ELC.SUB
L131	3275	SEA FILE=REGISTRY ABB=ON	PLU=ON	(NI OR CU OR RU OR AG OR LI OR NA OR K OR RB OR AG OR MG OR CA OR SR) /ELS (L) 1/ELC.SUB
L132	838	SEA FILE=REGISTRY ABB=ON	PLU=ON	((NI OR CU OR RU OR AG) (L) X) /ELS (L) 2/ELC.SUB
L133	57038	SEA FILE=HCAPLUS ABB=ON	PLU=ON	L100 OR DMSO
L134	5147	SEA FILE=HCAPLUS ABB=ON	PLU=ON	L103 OR METHYL(A) FORMA TE
L135	5923	SEA FILE=HCAPLUS ABB=ON	PLU=ON	L104 OR SULFOLANE
L136	437	SEA FILE=HCAPLUS ABB=ON	PLU=ON	L106 OR METHYL(A) PYRRO LIDINE
L137	96479	SEA FILE=HCAPLUS ABB=ON	PLU=ON	L101 OR DIMETHYL(A) FOR

MAMIDE OR DMF

L138 15399 SEA FILE=HCAPLUS ABB=ON PLU=ON L107 OR DIMETHYL(A)ACE
TAMIDE OR DMA

L139 161985 SEA FILE=HCAPLUS ABB=ON PLU=ON (L133 OR L134 OR L135
OR L136 OR L137 OR L138)

L140 203 SEA FILE=HCAPLUS ABB=ON PLU=ON L86 AND L139

L141 441366 SEA FILE=HCAPLUS ABB=ON PLU=ON L131 AND (SALT? OR
ION OR CATION OR ANION OR ELECTROLYTE)

L142 20 SEA FILE=HCAPLUS ABB=ON PLU=ON L141 AND L140

L143 488995 SEA FILE=HCAPLUS ABB=ON PLU=ON (L128 OR L129 OR
L130) OR L132

L144 1582006 SEA FILE=HCAPLUS ABB=ON PLU=ON L131

L145 39442 SEA FILE=HCAPLUS ABB=ON PLU=ON L144(2A) (SALT OR ION
OR CATION OR ELECTROLYTE)

L146 34 SEA FILE=HCAPLUS ABB=ON PLU=ON L143 AND L140

L147 4 SEA FILE=HCAPLUS ABB=ON PLU=ON L145 AND L140

L148 44 SEA FILE=HCAPLUS ABB=ON PLU=ON L142 OR L146 OR L147

L149 8 SEA FILE=HCAPLUS ABB=ON PLU=ON L147 OR L98

L150 5176 SEA FILE=HCAPLUS ABB=ON PLU=ON L102 OR MONOGLYME

L151 5552 SEA FILE=HCAPLUS ABB=ON PLU=ON L109 OR DIGLYME

L152 1501 SEA FILE=HCAPLUS ABB=ON PLU=ON L110 OR TRIGLYME

L153 1928 SEA FILE=HCAPLUS ABB=ON PLU=ON L111 OR TETRAGLYME

L154 926 SEA FILE=HCAPLUS ABB=ON PLU=ON GLYME

L155 11569 SEA FILE=HCAPLUS ABB=ON PLU=ON (L150 OR L151 OR L152
OR L153) OR GLYME(A) (MONO OR DI OR TRI OR TETRA)

L156 19 SEA FILE=HCAPLUS ABB=ON PLU=ON L155 AND L148

L157 12052 SEA FILE=HCAPLUS ABB=ON PLU=ON L155 OR L154

L158 63 SEA FILE=HCAPLUS ABB=ON PLU=ON L157 AND L86

L159 35 SEA FILE=HCAPLUS ABB=ON PLU=ON L158 AND (L141 OR
L143 OR L145)

L161 893 SEA FILE=HCAPLUS ABB=ON PLU=ON PLASTICI? (A) SOLVENT?

L162 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L161 AND L86

L163 7 SEA FILE=HCAPLUS ABB=ON PLU=ON L99 AND L86

L164 405 SEA FILE=HCAPLUS ABB=ON PLU=ON L112

L165 1546 SEA FILE=HCAPLUS ABB=ON PLU=ON L113 OR DIMETHYL(A)ADI
PATE

L166 13589 SEA FILE=HCAPLUS ABB=ON PLU=ON L114 OR DIBUTYL(A) PHTH
ALATE

L167 15360 SEA FILE=HCAPLUS ABB=ON PLU=ON L115 OR PROPYLENE(A) CA
RBONATE

L168 30612 SEA FILE=HCAPLUS ABB=ON PLU=ON (L164 OR L165 OR L166
OR L167)

L169 136 SEA FILE=HCAPLUS ABB=ON PLU=ON L168 AND L86

L170 73 SEA FILE=HCAPLUS ABB=ON PLU=ON L169 AND (L141 OR
L143 OR L145 OR L49 OR L125)

L171 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L170 AND L93

L172 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L170 AND L89

L173 73 SEA FILE=HCAPLUS ABB=ON PLU=ON L170 AND (L168 OR
L161 OR L157 OR L139)

L174 73 SEA FILE=HCAPLUS ABB=ON PLU=ON L170 AND L168

L175 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L170 AND L161

L176 26 SEA FILE=HCAPLUS ABB=ON PLU=ON L170 AND L157

L177 25 SEA FILE=HCAPLUS ABB=ON PLU=ON L170 AND L139

L178 34 SEA FILE=HCAPLUS ABB=ON PLU=ON L171 OR L172 OR L175
OR L176 OR L177

L179 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L174 AND L89

L180 21939 SEA FILE=HCAPLUS ABB=ON PLU=ON L92(2A)ELECTROLYT?
L181 34 SEA FILE=HCAPLUS ABB=ON PLU=ON L180 AND L174
L182 50 SEA FILE=HCAPLUS ABB=ON PLU=ON L178 OR L179 OR L181
L183 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L89 AND L182
L184 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L182 AND L93
L185 34 SEA FILE=HCAPLUS ABB=ON PLU=ON L178 OR L179 OR L183
OR L184
L186 217974 SEA FILE=HCAPLUS ABB=ON PLU=ON METAL(A) (TRANSITION?
OR ALKALAI OR ALKALINE(A) EARTH)
L187 28466 SEA FILE=HCAPLUS ABB=ON PLU=ON L186(2A) (SALT OR
CATION OR ION OR ELECTROLYTE)
L188 45 SEA FILE=HCAPLUS ABB=ON PLU=ON L187 AND L86
L189 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L188 AND L93
L190 15 SEA FILE=HCAPLUS ABB=ON PLU=ON L188 AND L89
L192 1 SEA FILE=REGISTRY ABB=ON PLU=ON 542-78-9/RN
L193 7087 SEA FILE=HCAPLUS ABB=ON PLU=ON L192
L194 9135 SEA FILE=HCAPLUS ABB=ON PLU=ON L193 OR MALONALDEHYDE
OR (MALON OR MALONIC) (A) (?ALDEHYDE)
L196 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L94 AND L174
L198 4 SEA FILE=HCAPLUS ABB=ON PLU=ON L86 AND L194
L199 QUE ABB=ON PLU=ON FUELCELL? OR BATTERY? OR BATTERIES
? OR (FUEL? OR ELECTROCHEM? OR ELECTRO(W)CHEM? OR GALVA
N? OR ELECTROLY? OR SECONDAR? OR PRIMAR?) (2A)CELL? OR F
C OR SOFC OR DFC OR PEMFC
L200 QUE ABB=ON PLU=ON CATHOD? OR ANOD? OR ANOD?
L203 22 SEA FILE=HCAPLUS ABB=ON PLU=ON L149 OR L162 OR L163
OR L171 OR L172 OR L175 OR L179 OR L183 OR L184 OR
L189 OR L196 OR L198
L204 171 SEA FILE=HCAPLUS ABB=ON PLU=ON L87 OR L91 OR L142 OR
L146 OR L148 OR L156 OR L158 OR L159 OR L170
L205 114 SEA FILE=HCAPLUS ABB=ON PLU=ON L173 OR L174 OR (L176
OR L177 OR L178) OR L181 OR L182 OR L185 OR L188 OR
L190
L206 214 SEA FILE=HCAPLUS ABB=ON PLU=ON (L203 OR L204 OR
L205)
L207 87 SEA FILE=HCAPLUS ABB=ON PLU=ON L206 AND L199
L208 44 SEA FILE=HCAPLUS ABB=ON PLU=ON L207 AND L200
L209 12459 SEA FILE=HCAPLUS ABB=ON PLU=ON ELECTROLY?(2A)MEMBRAN?
L210 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L209 AND L206
L211 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L209 AND L207
L212 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L209 AND L208
L213 5 SEA FILE=HCAPLUS ABB=ON PLU=ON (L210 OR L211 OR
L212)
L214 47 SEA FILE=HCAPLUS ABB=ON PLU=ON L213 OR L208
L215 67 SEA FILE=HCAPLUS ABB=ON PLU=ON L214 OR L203
L221 12 SEA FILE=HCAPLUS ABB=ON PLU=ON L215 AND L21
L224 26 SEA FILE=HCAPLUS ABB=ON PLU=ON L203 OR L221

=> => d l224 1-26 ibib abs hitstr hitind

L224 ANSWER 1 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:1049836 HCAPLUS

DOCUMENT NUMBER: 143:348732

TITLE: Method for improving the adhesion of organic

coatings to other coating layers or other entities

INVENTOR(S): Bateman, Stuart Arthur; Cardonna, Francisco; Simons, Ranya; Wu, Dong Yang; Berry, Douglas H.; Kirchner, James F.; Kobak, Seana B.; Seebergh, Jill E.

PATENT ASSIGNEE(S): Australia

SOURCE: PCT Int. Appl., 80 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005089480	A2	20050929	WO 2005-US9091	2005 0317

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: AU 2004-901481 A 2004
0319

AB The title method involves treatment of the coating with a solvent and an adhesion promoter based on polymeric or nonpolymeric compds. having ≥ 1 group selected amine, alc., carboxylic acid, ester, thiol, ether, epoxy, isocyanate, isothiocyanate, and anhydride, so that the coating is swollen as a result of the treatment. Thus, the adhesion of a white polyurethane paint layer to a blue polyurethane overcoating was improved by treatment of the white layer with CH_2Cl_2 containing amine-terminated polypropylene glycol.

IT 9002-98-6 25322-68-3D, Polyethylene glycol, derivs. 25322-69-4D, Polypropylene glycol, amine-, carboxy-, or epoxy-terminated 26913-06-4, Poly[imino(1,2-ethanediyl)]

RL: TEM (Technical or engineered material use); USES (Uses) (adhesion promoter; improving adhesion of organic coatings to other coating layers or other entities by treatment with swelling solvents containing adhesion promoters)

RN 9002-98-6 HCAPLUS

CN Aziridine, homopolymer (9CI) (CA INDEX NAME)

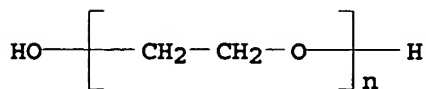
CM 1

CRN 151-56-4

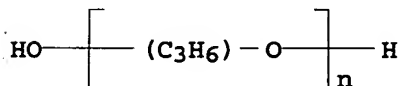
CMF C2 H5 N



RN 25322-68-3 HCAPLUS

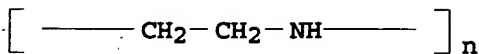
CN Poly(oxy-1,2-ethanediyl), α -hydro- ω -hydroxy- (9CI)
(CA INDEX NAME)

RN 25322-69-4 HCAPLUS

CN Poly[oxy(methyl-1,2-ethanediyl)], α -hydro- ω -hydroxy-
(9CI) (CA INDEX NAME)

RN 26913-06-4 HCAPLUS

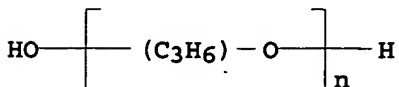
CN Poly[imino(1,2-ethanediyl)] (9CI) (CA INDEX NAME)



IT 25322-69-4, Polypropylene glycol

RL: TEM (Technical or engineered material use); USES (Uses)
(adhesion promoters; improving adhesion of organic coatings to
other coating layers or other entities by treatment with
swelling solvents containing adhesion promoters)

RN 25322-69-4 HCAPLUS

CN Poly[oxy(methyl-1,2-ethanediyl)], α -hydro- ω -hydroxy-
(9CI) (CA INDEX NAME)

IC ICM C09D

CC 42-1 (Coatings, Inks, and Related Products)

- IT Alcohols, uses
Amines, uses
Anhydrides
Carboxylic acids, uses
Epoxides
Esters, uses
Ethers, uses
Isocyanates
Isothiocyanates
Thiols, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(adhesion promoter; improving adhesion of organic coatings to other coating layers or other entities by treatment with **swelling solvents** containing adhesion promoters)
- IT Silanes
RL: TEM (Technical or engineered material use); USES (Uses)
(amino, adhesion promoter; improving adhesion of organic coatings to other coating layers or other entities by treatment with **swelling solvents** containing adhesion promoters)
- IT Acrylic polymers, uses
Epoxy resins, uses
Polycarbonates, uses
Polyesters, uses
Polyurethanes, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(coating; improving adhesion of organic coatings to other coating layers or other entities by treatment with **swelling solvents** containing adhesion promoters)
- IT Dendritic polymers
Polyoxyalkylenes, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(functionalized, adhesion promoters; improving adhesion of organic coatings to other coating layers or other entities by treatment with **swelling solvents** containing adhesion promoters)
- IT Ethers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(glycidyl, adhesion promoter; improving adhesion of organic coatings to other coating layers or other entities by treatment with **swelling solvents** containing adhesion promoters)
- IT Adhesion promoters
Solvents
(improving adhesion of organic coatings to other coating layers or other entities by treatment with **swelling solvents** containing adhesion promoters)
- IT Adhesives
Decoration
Sealing compositions
(other entities; improving adhesion of organic coatings to other coating layers or other entities by treatment with **swelling solvents** containing adhesion promoters)
- IT Paints
(polyurethane, PPG Aerospace, Eclipse Range, Desothane HS; improving adhesion of organic coatings to other coating layers or other entities by treatment with **swelling**

- solvents** containing adhesion promoters)
- IT Decalcomanias
(pressure-sensitive, other entities; improving adhesion of organic coatings to other coating layers or other entities by treatment with **swelling solvents** containing adhesion promoters)
- IT Amines, uses
Epoxides
RL: TEM (Technical or engineered material use); USES (Uses)
(silyl, adhesion promoter; improving adhesion of organic coatings to other coating layers or other entities by treatment with **swelling solvents** containing adhesion promoters)
- IT Amides, uses
Aromatic compounds
Halides
Ketones, uses
RL: NUU (Other use, unclassified); USES (Uses)
(solvents; improving adhesion of organic coatings to other coating layers or other entities by treatment with **swelling solvents** containing adhesion promoters)
- IT 107-13-1D, 2-Propenenitrile, hydrogenated, Michael-addition dendrimers
RL: TEM (Technical or engineered material use); USES (Uses)
(Polypropylenimine; improving adhesion of organic coatings to other coating layers or other entities by treatment with **swelling solvents** containing adhesion promoters)
- IT 56-18-8, Dipropylenetriamine 107-10-8, Propylamine, uses
107-15-3, Ethylenediamine, uses 110-85-0, Piperazine, uses
111-15-9 111-40-0, Diethylenetriamine 112-24-3,
Triethylenetetramine 112-57-2, Tetraethylenepentamine
151-56-4D, Aziridine, derivs. 929-59-9, 2,2'-
(Ethylenedioxy)bis(ethylamine) 2997-01-5, 4,7-Dioxadecane-1,10-diamine 3454-29-3, Trimethylolpropane triglycidyl ether
4067-16-7, Pentaethylenehexamine 4246-51-9, 4,7,10-Trioxa-1,13-tridecanediamine 5123-26-2, 4,4'-Diaminodicyclohexylamine
7209-38-3, 1,4-Bis(3-aminopropyl)piperazine 7300-34-7,
4,9-Dioxadodecane-1,12-diamine 9002-98-6 10563-26-5,
N,N'-Bis(3-aminopropyl)ethylenediamine 13531-52-7,
3-[(2-Aminoethyl)amino]propylamine 25322-68-3D,
Polyethylene glycol, derivs. 25322-69-4D,
Polypropylene glycol, amine-, carboxy-, or
epoxy-terminated 26403-72-5, Polyethylene glycol
diglycidyl ether 26913-06-4, Poly[imino(1,2-ethanediyl)]
28631-79-0, Aminoethylpiperazine 35141-30-1 39423-51-3, T-403
41240-13-5 52234-82-9, Trimethylolpropane tris(3-aziridinopropionate)
RL: TEM (Technical or engineered material use); USES (Uses)
(adhesion promoter; improving adhesion of organic coatings to other coating layers or other entities by treatment with **swelling solvents** containing adhesion promoters)
- IT 25322-69-4, Polypropylene glycol
RL: TEM (Technical or engineered material use); USES (Uses)
(adhesion promoters; improving adhesion of organic coatings to other coating layers or other entities by treatment with **swelling solvents** containing adhesion promoters)
- IT 865536-00-1, Desothane HS 70846 865536-04-5, Desothane HS-S 601X

RL: TEM (Technical or engineered material use); USES (Uses)
(coating; improving adhesion of organic coatings to other coating
layers or other entities by treatment with swelling
solvents containing adhesion promoters)

IT 75-09-2, Dichloromethane, uses 78-93-3, MEK, uses 100-51-6,
Benzyl alcohol, uses 108-21-4, Isopropyl acetate 109-86-4,
Ethylene glycol monomethyl ether 109-99-9, THF, uses 110-43-0,
Amyl methyl ketone 110-71-4, Ethylene glycol dimethyl ether
111-96-6, Diethylene glycol dimethyl ether 141-78-6, Ethyl
acetate, uses 540-88-5, tert-Butyl acetate 872-50-4, uses
25323-30-2, Dichloroethylene

RL: NUU (Other use, unclassified); USES (Uses)
(solvent; improving adhesion of organic coatings to other coating
layers or other entities by treatment with swelling
solvents containing adhesion promoters)

IT 67-63-0, Isopropyl alcohol, uses 107-21-1D, Ethylene glycol,
diethers 110-12-3, Isoamyl methyl ketone 51901-33-8, Ethylene
glycol acetate 57828-31-6, Propylene glycol acetate

RL: NUU (Other use, unclassified); USES (Uses)
(solvents; improving adhesion of organic coatings to other coating
layers or other entities by treatment with swelling
solvents containing adhesion promoters)

L224 ANSWER 2 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:673175 HCAPLUS

DOCUMENT NUMBER: 143:175508

TITLE: Complexing sorbent, method for the production
and use thereof

INVENTOR(S): Polosin, Vladimir Mikhailovich; Krasavin, Igor
Alexandrovich; Orlova, Galina Vladimirovna;
Visokova, Nina Nikolaevna; Dolzhnikova, Elena
Nikolaevna; Ryabokobilko, Yuri Sergeevich;
Evdokimova, Natalia Nikolaevna; Belyakov,
Evgeni Alexandrovich

PATENT ASSIGNEE(S): Russia

SOURCE: PCT Int. Appl., 20 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Russian

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005068070	A1	20050728	WO 2005-RU12	

2005
0117

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ,
CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG,
ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP,
KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL,
PT, RO, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT,
TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,

ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH,
CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT,
LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF,
CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.:

RU 2004-100851

A

2004

0115

AB The invention relates to applied chemical, in particular to a complexing sorbent containing an active sorbing layer which is immobilized on a solid carrier embodied as a cellulose or a synthetic polymer and comprises ethylenediamine or diethylenetriamine or triethylenetetramine or tetraethylenepentamine or polyethylenepolyamine or polyethylenepolyamine with copolymers, condensed with complexons, selected from a group containing carboxyl-containing complexons with fragments $\text{-NHCH}_2\text{COOH}$, $\text{-N(CH}_2\text{COOH)}_2$, complexons with phosphonic groups arrangement $\text{-N(CH}_2\text{PO}_3\text{H}_2)_2$, hydroxyl-containing complexons with fragments $\text{=NCH}_2\text{CH}_2\text{OH}$, $\text{HOCH}_2\text{CH}_2\text{-N-CH}_2\text{COOH}$, $\text{HOCH}_2\text{CH}_2\text{-N-CH}_2\text{PO(OH)}_2$. Methods for producing inventive sorbent and using said sorbent for removing ions of a variety of valencies of different metals and metalloids from aqueous media at a large range of pH associated with a subsequent regeneration of said sorbent are also disclosed. Monovalent cations, such as sodium, potassium, and lithium, did not sorb well.

IT 7440-50-8D, Copper, cations 14127-61-8
, Calcium ion, reactions 14701-21-4, Silver
ion, reactions 22537-22-0, Magnesium ion
, reactions 22537-39-9, Strontium ion,
reactions

RL: ANT (Analyte); RCT (Reactant); ANST (Analytical study); RACT
(Reactant or reagent)
(complexing sorbent, method for production and use thereof for
cation exchange)

RN 7440-50-8 HCAPLUS

CN Copper (7CI, 8CI, 9CI) (CA INDEX NAME)

Cu

RN 14127-61-8 HCAPLUS

CN Calcium, ion (Ca^{2+}) (8CI, 9CI) (CA INDEX NAME)

Ca^{2+}

RN 14701-21-4 HCAPLUS

CN Silver, ion (Ag^{1+}) (8CI, 9CI) (CA INDEX NAME)

Ag^{+}

RN 22537-22-0 HCAPLUS

CN Magnesium, ion (Mg²⁺) (8CI, 9CI) (CA INDEX NAME)

Mg²⁺

RN 22537-39-9 HCAPLUS

CN Strontium, ion (Sr²⁺) (8CI, 9CI) (CA INDEX NAME)

Sr²⁺

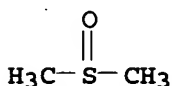
IT 67-68-5, Dimethylsulfoxide, uses

RL: NUU (Other use, unclassified); USES (Uses)

(complexing sorbent, method for production and use thereof for cation exchange)

RN 67-68-5 HCAPLUS

CN Methane, sulfinylbis- (9CI) (CA INDEX NAME)



IT 183428-29-7DP, chloromethylated, complexes with

N-(2-Hydroxyethyl)glycine, and sulfochlorinated, complexes with nitrilotriacetic acid 861001-88-9P 861001-89-0DP

, reaction products with (1-Hydroxyethylidene)diphosphonic acid 861001-90-3P 861001-92-5P 861001-95-8DP

, hydroxymethylated, complexes with N-(2-

hydroxyethyl)diethylenetriamine- N,N',N'',N'''-tetraacetic acid and

sulfonated, complexes with N-(Phosphonomethyl)iminodiacetic acid

861001-96-9DP, complexes with Phosphonomethylglycine

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(complexing sorbent, method for production and use thereof for cation exchange)

RN 183428-29-7 HCAPLUS

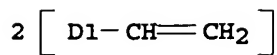
CN Aziridine, polymer with diethenylbenzene and ethenylbenzene, graft (9CI) (CA INDEX NAME)

CM 1

CRN 1321-74-0

CMF C10 H10

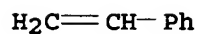
CCI IDS



CM 2

CRN 151-56-4
CMF C2 H5 N

CM 3

CRN 100-42-5
CMF C8 H8

RN 861001-88-9 HCAPLUS
CN Glycine, N,N-bis[2-[bis(carboxymethyl)amino]ethyl]-, polymer with
aziridine, cellulose and (chloromethyl)oxirane, graft (9CI) (CA
INDEX NAME)

CM 1

CRN 9004-34-6
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

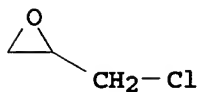
CM 2

CRN 151-56-4
CMF C2 H5 N



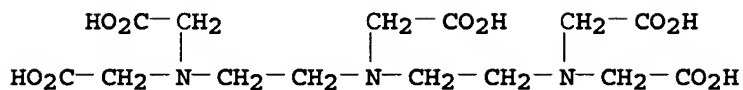
CM 3

CRN 106-89-8
CMF C3 H5 Cl O



CM 4

CRN 67-43-6
CMF C14 H23 N3 O10



RN 861001-89-0 HCAPLUS
CN Cellulose, polymer with aziridine and (chloromethyl)oxirane, graft
(9CI) (CA INDEX NAME)

CM 1

CRN 9004-34-6
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

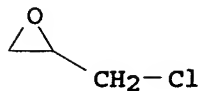
CM 2

CRN 151-56-4
CMF C2 H5 N



CM 3

CRN 106-89-8
CMF C3 H5 Cl O



RN 861001-90-3 HCAPLUS
CN Glycine, N,N'-1,2-ethanediylbis[N-(carboxymethyl)-, polymer with aziridine, cellulose and (chloromethyl)oxirane, graft (9CI) (CA INDEX NAME)

CM 1

CRN 9004-34-6
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

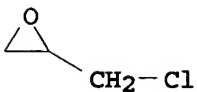
CM 2

CRN 151-56-4
CMF C2 H5 N



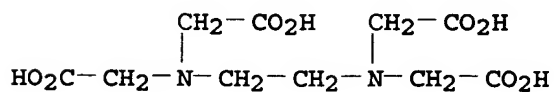
CM 3

CRN 106-89-8
CMF C3 H5 Cl O



CM 4

CRN 60-00-4
CMF C10 H16 N2 O8



RN 861001-92-5 HCAPLUS
CN Glycine, N-(2-hydroxyethyl)-, polymer with N-(2-aminoethyl)-N'-[2-
[(2-aminoethyl)amino]ethyl]-1,2-ethanediamine, cellulose and
(chloromethyl)oxirane, graft (9CI) (CA INDEX NAME)

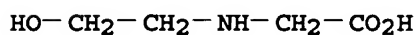
CM 1

CRN 9004-34-6
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 5835-28-9
CMF C4 H9 N O3



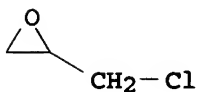
CM 3

CRN 112-57-2
CMF C8 H23 N5



CM 4

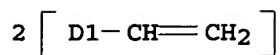
CRN 106-89-8
CMF C3 H5 Cl O



RN 861001-95-8 HCAPLUS
CN 1,2-Ethanediamine, N,N'-bis(2-aminoethyl)-, polymer with
diethenylbenzene and ethenylbenzene, graft (9CI) (CA INDEX NAME)

CM 1

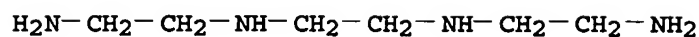
CRN 1321-74-0
CMF C10 H10
CCI IDS



CM 2

CRN 112-24-3

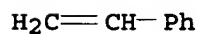
CMF C6 H18 N4



CM 3

CRN 100-42-5

CMF C8 H8



RN 861001-96-9 HCAPLUS

CN Formaldehyde, polymer with aziridine, phenol and 1-propene, graft.
(9CI) (CA INDEX NAME)

CM 1

CRN 151-56-4

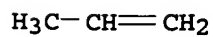
CMF C2 H5 N



CM 2

CRN 115-07-1

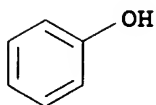
CMF C3 H6



CM 3

CRN 108-95-2

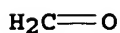
CMF C6 H6 O



CM 4

CRN 50-00-0

CMF C H2 O



IT 9002-98-6D, Polyaziridine, graft reaction products with cellulose epoxidized with epichlorohydrin, and optionally other polyamines
RL: RCT (Reactant); RACT (Reactant or reagent)
(d.p. 5.8 -1161; complexing sorbent, method for production and use thereof for cation exchange)
RN 9002-98-6 HCAPLUS
CN Aziridine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 151-56-4

CMF C2 H5 N



IT 861001-89-0P
RL: RCT (Reactant); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(intermediate product; complexing sorbent, method for production and use thereof for cation exchange)
RN 861001-89-0 HCAPLUS
CN Cellulose, polymer with aziridine and (chloromethyl)oxirane, graft (9CI) (CA INDEX NAME)

CM 1

CRN 9004-34-6

CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

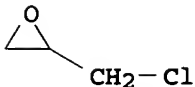
CM 2

CRN 151-56-4
CMF C2 H5 N



CM 3

CRN 106-89-8
CMF C3 H5 Cl O



IC ICM B01J020-26
ICS B01J020-24; B01J020-32; C02F001-28
CC 48-1 (Unit Operations and Processes)
Section cross-reference(s): 35, 38, 79
IT Amines, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(polyamines, nonpolymeric, polyethylene-, reaction products with terminal amino-carboxylic acid and amino-phosphonic acid type, immobilized on carrier; complexing sorbent, method for production and use thereof for cation exchange)
IT Polyamines
RL: RCT (Reactant); RACT (Reactant or reagent)
(polyethylene-, d.p. 5.8 -1161; complexing sorbent, method for production and use thereof for cation exchange)
IT Polyamines
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyethylene-, reaction products, reaction products with cellulose epoxidized with epichlorohydrin, then with various polyamines; complexing sorbent, method for production and use thereof for cation exchange)
IT Polyamines
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyethylene-, reaction products, reaction products with styrene-divinyl benzene- based copolymers; complexing sorbent, method for production and use thereof for cation exchange)
IT Polyamines

RL: TEM (Technical or engineered material use); USES (Uses)
 (polyethylene-, reaction products, reaction products
 with terminal amino-carboxylic acid and amino-phosphonic acid
 type, immobilized on carrier; complexing sorbent, method for
 production and use thereof for cation exchange)

IT 7439-89-6D, Iron, cations 7439-92-1D, Lead, cations
 7439-96-5D, Manganese, cations 7440-32-6D, Titanium, cations
 7440-42-8D, Boron, cations 7440-47-3D, Chromium, cations
 7440-50-8D, Copper, cations 7440-55-3D,
 Gallium, cations 7440-69-9D, Bismuth, cations 7440-74-6D,
 Indium, cations 14127-61-8, Calcium ion,
 reactions 14701-21-4, Silver ion, reactions
 14701-22-5, reactions 22537-22-0, Magnesium ion
 , reactions 22537-23-1, Aluminum ion, reactions
 22537-39-9, Strontium ion, reactions
 22537-48-0, Cadmium ion, reactions 22541-12-4, Barium ion,
 reactions 22541-53-3, reactions 23713-49-7, Zinc ion,
 reactions

RL: ANT (Analyte); RCT (Reactant); ANST (Analytical study); RACT
 (Reactant or reagent)
 (complexing sorbent, method for production and use thereof for
 cation exchange)

IT 64-17-5, Ethanol, uses 67-63-0, Isopropanol, uses
 67-68-5, Dimethylsulfoxide, uses

RL: NUU (Other use, unclassified); USES (Uses)
 (complexing sorbent, method for production and use thereof for
 cation exchange)

IT 139-13-9DP, Nitrilotriacetic acid, complexes with sulfochlorinated
 styrene-divinyl benzene-aziridine graft copolymer 1071-83-6DP,
 Phosphonomethylglycine, complexes with phenol-formaldehyde-
 propylene-aziridine graft copolymer 2809-21-4DP,
 (1-Hydroxyethylidene)diphosphonic acid, reaction products with
 cellulose- polyaziridine- epichlorohydrin copolymer 5994-61-6DP,
 N-(Phosphonomethyl)iminodiacetic acid, complexes with sulfonated
 styrene-divinyl benzene-triethylenetetraamine graft copolymer
 9004-34-6DP, Cellulose, reaction products with 17261-34-6DP,
 Iminodimethylenephosphonic acid, reaction products with
 epichlorohydrin-cellulose-diethylenetriamine copolymer
 53825-97-1DP, N-(2-Hydroxyethyl)diethylenetriamine-N,N',N'',N'''-
 tetraacetic acid, complexes with hydroxymethylated styrene-divinyl
 benzene-triethylenetetraamine graft copolymer
 183428-29-7DP, chloromethylated, complexes with
 N-(2-Hydroxyethyl)glycine, and sulfochlorinated, complexes with
 nitrilotriacetic acid 861001-88-9P 861001-89-0DP
 , reaction products with (1-Hydroxyethylidene)diphosphonic acid
 861001-90-3P 861001-92-5P 861001-93-6DP,
 reaction products with iminodimethylenephosphonic acid
 861001-94-7DP, reaction products with sulfonated- chlorided
 styrene-divinyl benzene copolymer 861001-95-8DP,
 hydroxymethylated, complexes with N-(2-
 hydroxyethyl)diethylenetriamine- N,N',N'',N'''-tetraacetic acid and
 sulfonated, complexes with N-(Phosphonomethyl)iminodiacetic acid
 861001-96-9DP, complexes with Phosphonomethylglycine

RL: SPN (Synthetic preparation); TEM (Technical or engineered
 material use); PREP (Preparation); USES (Uses)
 (complexing sorbent, method for production and use thereof for

cation exchange)
 IT 9002-98-6D, Polyaziridine, graft reaction products with cellulose epoxidized with epichlorohydrin, and optionally other polyamines
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (d.p. 5.8 -1161; complexing sorbent, method for production and use thereof for cation exchange)
 IT 861001-89-0P
 RL: RCT (Reactant); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
 (intermediate product; complexing sorbent, method for production and use thereof for cation exchange)

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L224 ANSWER 3 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:615172 HCAPLUS

DOCUMENT NUMBER: 143:287087

TITLE: Grafting of glycidyl methacrylate onto polypropylene using supercritical carbon dioxide

AUTHOR(S): Kunita, M. H.; Rinaldi, A. W.; Giroto, E. M.; Radovanovic, E.; Muniz, E. C.; Rubira, A. F.

CORPORATE SOURCE: Grupo de Materiais Polimericos e Compositos, Departamento de Quimica, Universidade Estadual de Maringa, Maringa, 87020-900, Brazil

SOURCE: European Polymer Journal (2005), 41(9), 2176-2182

CODEN: EUPJAG; ISSN: 0014-3057

PUBLISHER: Elsevier B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Free-radical grafting of glycidyl methacrylate (GMA) onto polypropylene (PP) films has been studied using supercrit. carbon dioxide (SC-CO2) as a solvent and a swelling agent. As the reaction temperature was below the m.p., PP was modified in the solid phase. The PP film was first soaked with the monomer GMA and benzoyl peroxide (BPO) as an initiator using SC-CO2 at different exptl. conditions of pressure, temperature, and thermal treatment time. After releasing CO2, film GMA mols. were grafted onto PP in different times. Using this method, the degree of grafting and the morphol. could be controlled through the combination of pressure, temperature, and soaking time. FTIR spectra confirmed that GMA had been grafted onto PP and that polypropylene-graft-glycidyl methacrylate (PP-g-GMA) presented a high surface reactivity for conductive polyaniline anchoring. DSC measurements and TG analyses showed that the thermal profiles of the graft copolymer and virgin PP are quite similar and that the graft PP does not exhibit changes in terms of thermal degradation profile and melting temperature, resp. X-ray data showed that a high degree of grafting leads to a lower degree of crystallinity of polypropylene.

IT 25233-30-1, Polyaniline

RL: PRP (Properties)

(grafting of glycidyl methacrylate onto polypropylene
using supercrit. carbon dioxide for polyaniline anchoring)

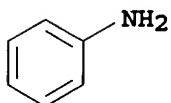
RN 25233-30-1 HCAPLUS

CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3

CMF C6 H7 N



CC 37-5 (Plastics Manufacture and Processing)

Section cross-reference(s): 76

ST grafting glycidyl methacrylate polypropylene supercrit
carbon dioxide; conductive polyaniline anchoring glycidyl
methacrylate propylene graft copolymer

IT Polyanilines

RL: PRP (Properties)

(grafting of glycidyl methacrylate onto polypropylene
using supercrit. carbon dioxide for conductive polyaniline
anchoring)

IT Conducting polymers

Crystallinity

Crystallization

Melting point

Polymer morphology

Surface conductivity

(grafting of glycidyl methacrylate onto polypropylene
using supercrit. carbon dioxide for polyaniline anchoring)

IT Polymer degradation

(thermal; grafting of glycidyl methacrylate onto
polypropylene using supercrit. carbon dioxide for
polyaniline anchoring)

IT 25233-30-1, Polyaniline

RL: PRP (Properties)

(grafting of glycidyl methacrylate onto polypropylene
using supercrit. carbon dioxide for polyaniline anchoring)

IT 110221-98-2P, Propylene-glycidyl methacrylate graft copolymer

RL: PRP (Properties); SPN (Synthetic preparation); PREP
(Preparation)

(grafting of glycidyl methacrylate onto polypropylene
using supercrit. carbon dioxide for polyaniline anchoring)

IT 124-38-9, Carbon dioxide, uses

RL: NUU (Other use, unclassified); USES (Uses)

(supercrit.; grafting of glycidyl methacrylate onto
polypropylene using supercrit. carbon dioxide for
polyaniline anchoring)

REFERENCE COUNT:

40

THERE ARE 40 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L224 ANSWER 4 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2004:252055 HCAPLUS
 DOCUMENT NUMBER: 140:256340
 TITLE: Anodes for lithium battery
 INVENTOR(S): Kim, Yong-tae; Choi, Su-suk; Choi, Yun-suk;
 Lee, Kyoung-hee
 PATENT ASSIGNEE(S): Samsung Sdi Co., Ltd., S. Korea
 SOURCE: U.S. Pat. Appl. Publ., 10 pp.
 CODEN: USXXCO
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004058232	A1	20040325	US 2003-664157	2003 0917
JP 2004119372	A2	20040415	JP 2003-308015	2003 0829
CN 1492523	A	20040428	CN 2003-158726	2003 0922
PRIORITY APPLN. INFO.:		KR 2002-57577	A	2002 0923

AB A lithium neg. electrode for a lithium battery has good cycle life and capacity characteristics. The lithium neg. electrode comprises a lithium metal layer and a protective layer present on the lithium metal layer, where the protective layer includes an organosulfur compound. An organosulfur compound having a thiol terminal group is preferred since such a compound can form a complex with lithium metal to enable coating to be carried out easily. The organosulfur compound has a large number of S or N elements having high electronegativity to form a complex with lithium ions, so it renders lithium ions to be deposited relatively evenly on the lithium metal surface, reducing dendrite formation.

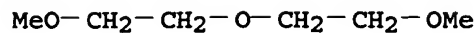
IT 110-71-4 111-96-6, Diglyme
 126-33-0, Sulfolane 7439-93-2,
 Lithium, uses
 RL: DEV (Device component use); USES (Uses)
 (anodes for lithium battery)

RN 110-71-4 HCAPLUS
 CN Ethane, 1,2-dimethoxy- (8CI, 9CI) (CA INDEX NAME)

MeO-CH₂-CH₂-OMe

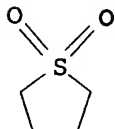
RN 111-96-6 HCAPLUS

CN Ethane, 1,1'-oxybis[2-methoxy- (9CI) (CA INDEX NAME)



RN 126-33-0 HCAPLUS

CN Thiophene, tetrahydro-, 1,1-dioxide (8CI, 9CI) (CA INDEX NAME)



RN 7439-93-2 HCAPLUS

CN Lithium (7CI, 8CI, 9CI) (CA INDEX NAME)

Li

IT 25233-30-1, Polyaniline 25233-30-1D,
Polyaniline, sulfonated 25322-68-3, Peo
25322-69-4, Polypropylene oxide
97332-10-0, Poly(N-propylaziridine)
RL: MOA (Modifier or additive use); USES (Uses)
(anodes for lithium battery)

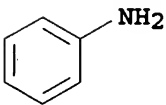
RN 25233-30-1 HCAPLUS

CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3

CMF C6 H7 N



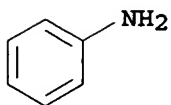
RN 25233-30-1 HCAPLUS

CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

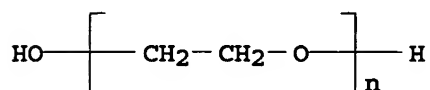
CM 1

CRN 62-53-3

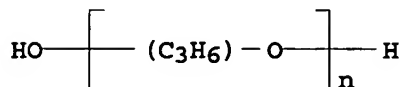
CMF C6 H7 N



RN 25322-68-3 HCAPLUS
 CN Poly(oxy-1,2-ethanediyl), α -hydro- ω -hydroxy- (9CI)
 (CA INDEX NAME)



RN 25322-69-4 HCAPLUS
 CN Poly[oxy(methyl-1,2-ethanediyl)], α -hydro- ω -hydroxy-
 (9CI) (CA INDEX NAME)

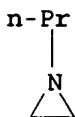


RN 97332-10-0 HCAPLUS
 CN Aziridine, 1-propyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 5536-98-1

CMF C5 H11 N



IT 9002-98-6 9002-98-6D, derivs.
 RL: TEM (Technical or engineered material use); USES (Uses)
 (protective coating; anodes for lithium
 battery)

RN 9002-98-6 HCAPLUS
 CN Aziridine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 151-56-4

CMF C2 H5 N



RN 9002-98-6 HCAPLUS
 CN Aziridine, homopolymer (9CI) (CA INDEX NAME)
 CM 1
 CRN 151-56-4
 CMF C2 H5 N



IC ICM H01M002-16
 ICS H01M004-66; H01M004-40
 INCL 429137000; 429246000; 429245000; 429212000; 429231950
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 Section cross-reference(s): 38
 ST **anode lithium battery**
 IT Chalcogenides
 Oxides (inorganic), uses
 RL: DEV (Device component use); USES (Uses)
 (Li-containing; **anodes for lithium battery**)
 IT Peroxides, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (acyl; **anodes for lithium battery**)
 IT Hydroperoxides
 RL: MOA (Modifier or additive use); USES (Uses)
 (alkyl, tertiary; **anodes for lithium battery**)
 IT Peroxides, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (alkyl; **anodes for lithium battery**)
 IT **Battery anodes**
 Coating materials
 Conducting polymers
 (**anodes for lithium battery**)
 IT Acrylic polymers, uses
 Polyanilines
 Polyoxyalkylenes, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (**anodes for lithium battery**)
 IT Amino acids, uses
 Halogens
 Lewis acids
 Rare earth chlorides
 Sulfonic acids, uses
 Transition metal compounds
 RL: MOA (Modifier or additive use); USES (Uses)

(dopant; anodes for lithium battery)

IT Primary batteries
Secondary batteries
(lithium; anodes for lithium battery)

IT Esters, uses
Ketals
RL: MOA (Modifier or additive use); USES (Uses)
(peroxy; anodes for lithium battery)

IT Crown ethers
Polybenzimidazoles
Polyquinolines
Polyquinoxalines
RL: MOA (Modifier or additive use); USES (Uses)
(thiophenes, polymers; anodes for lithium battery)

IT 110-71-4 111-96-6, Diglyme
126-33-0, Sulfolane 646-06-0, 1,3-Dioxolane
7439-93-2, Lithium, uses 7704-34-9, Sulfur, uses
RL: DEV (Device component use); USES (Uses)
(anodes for lithium battery)

IT 67-63-0, Isopropyl alcohol, uses 75-91-2, tert-Butyl
hydroperoxide 78-63-7, 2,5-Dimethyl-2,5-di-(tert-
butylperoxy)hexane 78-67-1, Azobisisobutyronitrile 80-15-9,
Cumene hydroperoxide 80-43-3, Dicumyl peroxide 94-36-0,
Dibenzoyl peroxide, uses 105-74-8, Dilauroyl peroxide
110-05-4, Di-tert-butyl peroxide 123-23-9, Succinic acid
peroxide 762-12-9, Didecanoyl peroxide 927-07-1,
tert-Butylperoxypivalate 2167-23-9, 2,2-Di-(tert-
butylperoxy)butane 3025-88-5, 2,5-Dihydroperoxy-2,5-
dimethylhexane 4511-39-1, tert-Amylperoxybenzoate 15667-10-4,
1,1-Di-(tert-amylperoxy)cyclohexane 16066-38-9,
Di(n-propyl)peroxy dicarbonate 16111-62-9, Di(2-
ethylhexyl)peroxy dicarbonate 19910-65-7, Di(sec-butyl)peroxy
dicarbonate 24937-05-1, Poly(ethyleneadipate) 24938-43-0,
Poly(β-propiolactone) 24969-06-0, Polyepichlorohydrin
25190-62-9, Poly(p-phenylene) 25233-30-1, Polyaniline
25233-30-1D, Polyaniline, sulfonated 25233-34-5,
Polythiophene 25233-34-5D, Polythiophene, derivs.
25322-68-3, Peo 25322-69-4,
Polypropylene oxide 25667-11-2,
Poly(ethylenesuccinate) 25721-76-0, Polyethylene
glycol dimethacrylate 25852-49-7, Polypropylene glycol
dimethacrylate 26570-48-9, Poly(ethylene
glycol diacrylate) 26748-47-0, α-Cumylperoxyneodecanoate
34099-48-4, Peroxydicarbonate 52496-08-9,
Poly(propyleneglycoldiacrylate) 55794-20-2, Ethyl
3,3-di-(tert-butylperoxy)butyrate 95732-35-7 97332-10-0
, Poly(N-propylaziridine) 139096-57-4, Isoquinoline homopolymer
172973-34-1
RL: MOA (Modifier or additive use); USES (Uses)
(anodes for lithium battery)

IT 865-44-1, Iodine trichloride 1493-13-6, Triflic acid
7446-11-9, Sulfur trioxide, uses 7550-45-0, Titanium chloride
(TiCl₄) (T-4)-, uses 7553-56-2, Iodine, uses 7601-90-3,
Perchloric acid, uses 7637-07-2, uses 7647-01-0, Hydrochloric
acid, uses 7647-19-0, Phosphorus pentafluoride 7664-39-3,

Hydrofluoric acid, uses 7664-93-9, Sulfuric acid, uses 7697-37-2, Nitric acid, uses 7705-08-0, Ferric chloride, uses 7721-01-9, Tantalum chloride (TaCl₅) 7726-95-6, Bromine, uses 7782-44-7, Oxygen, uses 7782-50-5, Chlorine, uses 7783-68-8, Niobium fluoride nbf₅ 7783-70-2, Antimony pentafluoride 7783-81-5 7783-82-6 7783-93-9, Silver perchlorate 7784-36-3, Arsenic pentafluoride 7789-21-1, Fluorosulfonic acid 7789-33-5, Iodine monobromide 7790-94-5, Chlorosulfonic acid 7790-99-0, Iodine monochloride 10026-11-6 10026-12-7, Niobium chloride (NbCl₅) 10277-43-7, Lanthanum nitrate hexahydrate 10294-33-4, Boron tribromide 10294-34-5 13283-01-7 13499-05-3 13709-32-5, Bis(fluorosulfonyl)peroxide 13774-85-1 13819-84-6, Molybdenum fluoride mof₅ 13870-10-5, Iron chloride oxide feocl 13873-84-2, Iodine monofluoride 14635-75-7, Nitrosyl tetrafluoroborate 14797-73-0, Perchlorate 14874-70-5, Tetrafluoroborate 16871-80-0, Nitrosyl hexachloroantimonate 16887-00-6, Chloride, uses 16919-18-9, Hexafluorophosphate 16941-92-7, Hexachloroiridic acid 16973-45-8, Hexafluoroarsenate 17111-95-4 17856-92-7 20461-54-5, Iodide, uses 24959-67-9, Bromide, uses 25321-43-1, Octylbenzenesulfonic acid 27176-87-0, Dodecylbenzene sulfonic acid
 RL: MOA (Modifier or additive use); USES (Uses)
 (dopant; anodes for lithium battery)

IT 540-63-6, 1,2-Ethanedithiol 1072-71-5, 2,5-Dimercapto-1,3,4-thiadiazole 2001-93-6, 2,4-Dimercaptopyrimidine 2150-02-9, Bis(2-mercaptoethyl)ether 3570-55-6, Bis(2-mercaptoethyl)sulfide 9002-98-6 9002-98-6D, derivs. 37306-44-8D, Triazole, mecapto derivs 131538-50-6 135886-78-1 135886-79-2
 RL: TEM (Technical or engineered material use); USES (Uses)
 (protective coating; anodes for lithium battery)

IT 7704-34-9D, Sulfur, organosulfur compound
 RL: TEM (Technical or engineered material use); USES (Uses)
 (protective layer; anodes for lithium battery)

IT 273-77-8, 1,2,3-Benzothiadiazole 612-79-3, 6,6'-Biquinoline 25013-01-8, Polypyridine 25013-01-8D, Polypyridine, derivs. 26856-35-9, Dihydrophenanthrene 27986-50-1, Poly(1,3-cyclohexadiene) 30604-81-0, Polypyrrole 30604-81-0D, Polypyrrole, derivs. 51937-67-8, Polyferrocene 71730-08-0, Polyanthraquinone 136902-52-8; 2,2'-Bipyridine homopolymer 136902-52-8D, 2,2'-Bipyridine homopolymer, derivs. 190201-51-5, Pyrimidine homopolymer 190201-57-1, 1,5-Naphthyridine homopolymer
 RL: MOA (Modifier or additive use); USES (Uses)
 (thiophenes, polymers; anodes for lithium battery)

L224 ANSWER 5 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:161244 HCAPLUS

DOCUMENT NUMBER: 140:202430

TITLE: Salts of pentacyclic or tetrapentalene derived anions, and their uses as ionic conductive materials

INVENTOR(S): Armand, Michel; Michot, Christophe; Gauthier, Michel; Choquette, Yves

PATENT ASSIGNEE(S): Hydro-Quebec, Can.; Centre National De La
Recherche Scientifique (CNRS)
SOURCE: Eur. Pat. Appl., 33 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 5
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1391952	A2	20040225	EP 2003-292436	1997 1230
R: DE, FR, GB, IT CA 2194127	AA	19980630	CA 1996-2194127	1996 1230
CA 2199231	AA	19980905	CA 1997-2199231	1997 0305
EP 850933	A1	19980701	EP 1997-403188	1997 1230
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO EP 889863	A2	19990113	EP 1997-951051	1997 1230
EP 889863	B1	20030507		
R: DE, FR, GB, IT EP 890176	A1	19990113	EP 1997-951052	1997 1230
EP 890176	B1	20010620		
R: DE, FR, GB, IT JP 2000508114	T2	20000627	JP 1998-529517	1997 1230
JP 2000508346	T2	20000704	JP 1998-529516	1997 1230
JP 2000508676	T2	20000711	JP 1998-529514	1997 1230
JP 2000508677	T2	20000711	JP 1998-529515	1997 1230
JP 2000508678	T2	20000711	JP 1998-529518	1997 1230
JP 2002514245	T2	20020514	JP 1998-529513	1997 1230
US 6120696	A	20000919	US 1998-125792	

US 6171522	B1	20010109	US 1998-101811	1998 0828
US 6333425	B1	20011225	US 1998-101810	1998 1119
US 6228942	B1	20010508	US 1998-125798	1998 1119
US 6395367	B1	20020528	US 1998-125799	1998 1202
US 6319428	B1	20011120	US 1998-125797	1998 1202
US 6365068	B1	20020402	US 2000-609362	1998 1203
US 6576159	B1	20030610	US 2000-638793	2000 0630
US 2001024749	A1	20010927	US 2001-826941	2000 0809
US 6506517	B2	20030114		2001 0406
US 2002009650	A1	20020124	US 2001-858439	
US 2002102380	A1	20020801	US 2002-107742	2001 0516
US 6835495	B2	20041228		2002 0327
US 2003052310	A1	20030320	US 2002-253035	
US 2003066988	A1	20030410	US 2002-253970	2002 0924
US 2005074668	A1	20050407	US 2004-789453	2002 0924
US 2005123831	A1	20050609	US 2004-926283	2004 0227
PRIORITY APPLN. INFO.:			CA 1996-2194127	2004 0825
				A
				1996 1230
			CA 1997-2199231	A
				1997 0305
			EP 1997-403188	A3
				1997

		1230
WO 1997-CA1008	W	1997 1230
WO 1997-CA1009	W	1997 1230
WO 1997-CA1010	W	1997 1230
WO 1997-CA1011	W	1997 1230
WO 1997-CA1012	W	1997 1230
WO 1997-CA1013	W	1997 1230
US 1998-101810	A3	1998 1119
US 1998-101811	A3	1998 1119
US 1998-125798	A3	1998 1202
US 1998-125799	A3	1998 1202
US 1998-125797	A1	1998 1203
US 2000-638793	A1	2000 0809
US 2001-858439	A1	2001 0516
US 2002-107742	A1	2002

0327

AB This invention describes ionic compds. where the anionic charge is delocalized. One compound of the invention contains an anionic part associated with at least one mono- or multivalent cationic part Mm^+ , in a number sufficient to ensure electronic neutrality of the material. M can be a hydronium, nitrosyl NO^+ , an ammonium NH_4^+ , a metallic cation with valence m, an organic cation having a valence m, or an organometallic cation having valence m. The anionic charge is carried by a new pentacyclic moiety or derivative of tetrapentalene carrying electroattractive substituents. The compds. are used notably for ionic conduction, electronic conductors, dyes and colorants, and catalysts for diverse chemical reactions. They can also be used as electrolytes in fuel cells and batteries.

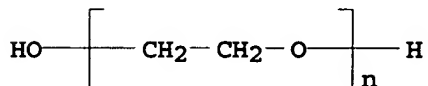
IT 25322-68-3, Polyethylene oxide

RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process)

(electrolyte complexes with lithium salts, carbon blacks, (1,2,3-triazolium) ionic liqs., and other materials; salts of pentacyclic or tetrapentalene derived anions, and their uses as ionic conductive materials)

RN 25322-68-3 HCAPLUS

CN Poly(oxy-1,2-ethanediyl), α -hydro- ω -hydroxy- (9CI)
(CA INDEX NAME)



IT 210470-02-3P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(electropolymd.; salts of pentacyclic or tetrapentalene derived anions, and their uses as ionic conductive materials)

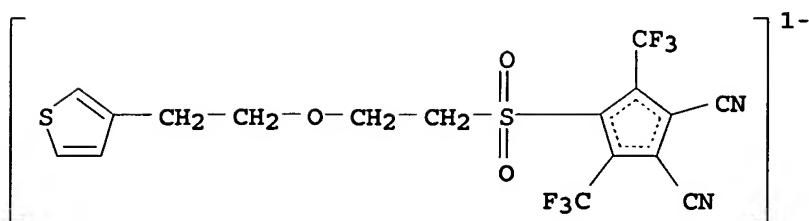
RN 210470-02-3 HCAPLUS

CN 1,3-Cyclopentadiene-1,2-dicarbonitrile, 4-[[2-[2-(3-thienyl)ethoxy]ethyl]sulfonyl]-3,5-bis(trifluoromethyl)-, ion(1-), potassium, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 210470-01-2

CMF C17 H11 F6 N2 O3 S2 . K



IT 7440-50-8, Copper, uses
 RL: CAT (Catalyst use); USES (Uses)
 (salts of pentacyclic or tetrapentalene derived
 anions, and their uses as ionic conductive materials)
 RN 7440-50-8 HCAPLUS
 CN Copper (7CI, 8CI, 9CI) (CA INDEX NAME)

Cu

IT 9003-07-0, Polypropylene
 RL: DEV (Device component use); PEP (Physical, engineering or
 chemical process); PYP (Physical process); PROC (Process); USES
 (Uses)
 (salts of pentacyclic or tetrapentalene derived anions, and
 their uses as ionic conductive materials)
 RN 9003-07-0 HCAPLUS
 CN 1-Propene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



IT 7439-93-2, Lithium, uses
 RL: DEV (Device component use); TEM (Technical or engineered
 material use); USES (Uses)
 (salts of pentacyclic or tetrapentalene derived
 anions, and their uses as ionic conductive materials)
 RN 7439-93-2 HCAPLUS
 CN Lithium (7CI, 8CI, 9CI) (CA INDEX NAME)

Li

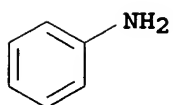
IT 89183-45-9, Polyaniline hydrochloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(salts of pentacyclic or tetrapentalene derived anions, and
their uses as ionic conductive materials)
RN 89183-45-9 HCAPLUS
CN Benzenamine, homopolymer, hydrochloride (9CI) (CA INDEX NAME)

CM 1

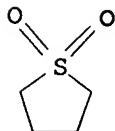
CRN 25233-30-1
CMF (C6 H7 N)x
CCI PMS

CM 2

CRN 62-53-3
CMF C6 H7 N



IT 126-33-0D, Sulfolane, derivs.
RL: NUU (Other use, unclassified); USES (Uses)
(solvent for title compds.; salts of pentacyclic or
tetrapentalene derived anions, and their uses as ionic
conductive materials)
RN 126-33-0 HCAPLUS
CN Thiophene, tetrahydro-, 1,1-dioxide (8CI, 9CI) (CA INDEX NAME)



IC ICM H01M006-16
ICS H01M010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 27, 28, 29, 35, 76
IT **Polymers, uses**
RL: DEV (Device component use); PRP (Properties); TEM (Technical
or engineered material use); USES (Uses)
(block, **ethylene oxide**, propylene oxide,
allyl glycidyl ether; salts of pentacyclic or tetrapentalene
derived anions, and their uses as ionic conductive materials)
IT **Polyurethanes, uses**
RL: NUU (Other use, unclassified); TEM (Technical or engineered
material use); USES (Uses)
(polyoxyalkylene-, **polyethylene glycol**- based,

"solvents" for title compds.; salts of pentacyclic or tetrapentalene derived anions, and their uses as ionic conductive materials)

IT 25322-68-3, Polyethylene oxide

RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process) (electrolyte complexes with lithium salts, carbon blacks, (1,2,3-triazolium) ionic liqs., and other materials; salts of pentacyclic or tetrapentalene derived anions, and their uses as ionic conductive materials)

IT 210470-02-3P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (electropolymd.; salts of pentacyclic or tetrapentalene derived anions, and their uses as ionic conductive materials)

IT 661461-54-7P

RL: PRP (Properties); PUR (Purification or recovery); SPN (Synthetic preparation); PREP (Preparation) (pure and polymer electrolytes with polyethylene oxide; salts of pentacyclic or tetrapentalene derived anions, and their uses as ionic conductive materials)

IT 110-86-1, Pyridine, uses 865-47-4 5264-33-5 7440-50-8

, Copper, uses 7440-66-6, Zinc, uses 7664-93-9, Sulfuric acid, uses 16941-12-1, Chloroplatinic acid

RL: CAT (Catalyst use); USES (Uses) (salts of pentacyclic or tetrapentalene derived anions, and their uses as ionic conductive materials)

IT 9003-07-0, Polypropylene

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)

(salts of pentacyclic or tetrapentalene derived anions, and their uses as ionic conductive materials)

IT 289-06-5D, Thiadiazole, anionic derivs. 289-95-2D, Pyrimidine, anionic derivs. 290-37-9D, Pyrazine, anionic derivs.

7439-93-2, Lithium, uses 11120-54-0D, Oxadiazole, anionic derivs.

RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)

(salts of pentacyclic or tetrapentalene derived anions, and their uses as ionic conductive materials)

IT 76-05-1, reactions 78-94-4, Methyl vinyl ketone, reactions

94-41-7 98-88-4, Benzoyl chloride 100-52-7, Benzaldehyde, reactions 100-66-3, Anisole, reactions 102-52-3, 1,1,3,3-Tetramethoxypropane 106-20-7, Di-2-ethylhexylamine 108-24-7, Acetic anhydride 109-72-8, Butyllithium, reactions 110-61-2, Succinic dinitrile 112-76-5, Stearic acid chloride 121-44-8, Triethylamine, reactions 143-33-9, Sodium cyanide 144-55-8, Sodium bicarbonate, reactions 303-04-8, 2,3-Dichloro-Hexafluoro-2-butene 326-90-9, 4,4,4-Trifluoro-1-(2-furyl)-1,3-butanedione 326-91-0 375-72-4, Perfluorobutanesulfonyl fluoride 407-38-5, 2,2,2-Trifluoroethyl trifluoroacetate 421-83-0, Trifluoromethanesulfonyl chloride 497-19-8, Sodium carbonate, reactions 538-75-0, Dicyclohexylcarbodiimide 542-92-7, Cyclopentadiene, reactions 554-13-2, Lithium carbonate 584-08-7, Potassium carbonate

676-58-4, Methylmagnesium chloride 677-25-8, Ethenesulfonyl fluoride 692-50-2 693-13-0, 1,3-Diisopropylcarbodiimide 764-93-2, 1-Decyne 765-12-8, Triethylene glycol divinyl ether 917-70-4, Lanthanum acetate 937-14-4, 3-Chloroperoxybenzoic acid 1000-84-6 1068-57-1, Acetylhydrazide 1122-28-7, 4,5-Dicyanoimidazole 1310-58-3, Potassium hydroxide, reactions 1522-22-1, Hexafluoroacetylacetone 1643-19-2, Tetrabutylammonium bromide 1648-99-3 2094-98-6, 1,1'-Azobis(cyclohexanecarbonitrile) 2582-30-1, 1-Aminoguanidine bicarbonate 2633-67-2, 4-Styrenesulfonyl chloride 2638-94-0, 4,4'-Azobis(4-cyanovaleric acid) 2893-78-9, Dichloroisocyanuric acid, sodium salt 3804-23-7, Scandium acetate 4546-95-6, 1,2,3-Triazole-4,5-dicarboxylic acid 7447-41-8, Lithium chloride, reactions 7647-01-0, Hydrochloric acid, reactions 7647-14-5, Sodium chloride, reactions 7664-39-3, Hydrofluoric acid, reactions 7757-82-6, Sodium sulfate, reactions 7758-09-0, Potassium nitrite 7782-50-5, Chlorine, reactions 7789-23-3, Potassium fluoride 9002-92-0, Brij 30 13360-57-1 13637-84-8, Chlorosulfonyl fluoride 13781-67-4, 2-(3-Thienyl)ethanol 14635-75-7, Nitrosonium tetrafluoroborate 16090-14-5 17455-13-9, 18-Crown-6 17587-22-3, 1,1,1,2,2,3,3-Heptafluoro-7,7-dimethyl-4,6-octanedione 20583-66-8, 1,1,1,5,5,6,6,7,7,7-Decafluoro-2,4-Heptanedione 26628-22-8, Sodium azide 27070-49-1, 1,2,3-Triazole 31469-15-5, 1-Methoxy-1-(trimethylsilyloxy)-2-methyl-1-propene 39262-22-1 39377-49-6, Copper cyanide 53188-07-1, Trolox 56512-49-3, 4-(Dimethylamino)azobenzene-4'-sulfonyl chloride 65039-09-0, 1-Ethyl-3-methyl-1H-imidazolium chloride 66051-48-7 77968-17-3 81850-46-6 81850-47-7 89183-45-9, Polyaniline hydrochloride 210049-00-6 210289-26-2 210289-55-7 210469-93-5 661461-58-1 661461-61-6

RL: RCT (Reactant); RACT (Reactant or reagent)
(salts of pentacyclic or tetrapentalene derived anions, and their uses as ionic conductive materials)

IT 126-33-0D, Sulfolane, derivs.

RL: NUU (Other use, unclassified); USES (Uses)
(solvent for title compds.; salts of pentacyclic or tetrapentalene derived anions, and their uses as ionic conductive materials)

L224 ANSWER 6 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:39670 HCAPLUS
DOCUMENT NUMBER: 140:79840
TITLE: Binder for a lithium-sulfur battery cathode
INVENTOR(S): Kim, Seok; Jung, Yongju; Han, Ji-Seong; Kim, Jan-Dee
PATENT ASSIGNEE(S): Samsung SDI Co., Ltd., S. Korea
SOURCE: U.S. Pat. Appl. Publ., 9 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 2004009399	A1	20040115	US 2003-614870	2003 0709
JP 2004047462	A2	20040212	JP 2003-166410	2003 0611
CN 1471184	A	20040128	CN 2003-145326	2003 0703
PRIORITY APPLN. INFO.:		KR 2002-40006	A	2002 0710

AB Disclosed is a binder for a lithium-sulfur battery including a butadiene-based copolymer. The binder exhibits chemical resistance to polysulfides, is stable at battery working temps., forms an emulsion in organic solvents and exhibits high adherence to pos. active materials and electrodes used in the lithium-sulfur battery. The disclosed binder compns., due to their high adherence to pos. active materials allow for higher relative amts. of pos. active materials to be used in the battery resulting in a high capacity lithium-sulfur battery.

IT 110-71-4 111-96-6, Diglyme
 RL: DEV (Device component use); USES (Uses)
 (binder for lithium-sulfur battery cathode)
 RN 110-71-4 HCAPLUS
 CN Ethane, 1,2-dimethoxy- (8CI, 9CI) (CA INDEX NAME)

MeO-CH₂-CH₂-OMe

RN 111-96-6 HCAPLUS
 CN Ethane, 1,1'-oxybis[2-methoxy- (9CI) (CA INDEX NAME)

MeO-CH₂-CH₂-O-CH₂-CH₂-OMe

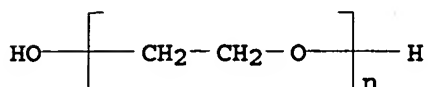
IT 9002-98-6 25322-68-3, Peo
 RL: MOA (Modifier or additive use); USES (Uses)
 (viscosity control agent; binder for lithium-sulfur battery cathode)
 RN 9002-98-6 HCAPLUS
 CN Aziridine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 151-56-4
 CMF C2 H5 N



RN 25322-68-3 HCAPLUS
 CN Poly(oxy-1,2-ethanediyl), α -hydro- ω -hydroxy- (9CI)
 (CA INDEX NAME)



IC ICM H01M004-62
 ICS H01M004-58; C08F036-06; C08F036-14; C08F036-16
 INCL 429217000; 429218100; 526291000; 526335000; 526339000; 526340000
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 ST lithium sulfur battery cathode binder
 IT Adhesion, physical
 Battery cathodes
 Binders
 (binder for lithium-sulfur battery cathode)
 IT ABS rubber
 Nitrile rubber, uses
 Styrene-butadiene rubber, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (binder for lithium-sulfur battery cathode)
 IT Secondary batteries
 (lithium; binder for lithium-sulfur battery cathode)
 IT Polyoxyalkylenes, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (viscosity control agent; binder for lithium-sulfur battery cathode)
 IT 9003-56-9
 RL: MOA (Modifier or additive use); USES (Uses)
 (abs rubber, binder for lithium-sulfur battery cathode)
 IT 110-71-4 111-96-6, Diglyme 126-33-0,
 Sulfolane 646-06-0, 1,3-Dioxolane 7704-34-9, Sulfur, uses
 33454-82-9, Lithium triflate
 RL: DEV (Device component use); USES (Uses)
 (binder for lithium-sulfur battery cathode)
 IT 116-15-4 9011-17-0 24981-14-4, Ethene, fluoro-homopolymer
 25038-71-5, Ethylene-tetrafluoroethylene copolymer 156395-51-6
 RL: MOA (Modifier or additive use); USES (Uses)
 (binder for lithium-sulfur battery cathode)
 IT 9003-18-3
 RL: MOA (Modifier or additive use); USES (Uses)
 (nitrile rubber, binder for lithium-sulfur battery cathode)
 IT 9003-55-8
 RL: MOA (Modifier or additive use); USES (Uses)

(styrene-butadiene rubber, binder for lithium-sulfur battery cathode)

IT 9002-89-5, Polyvinyl alcohol 9002-98-6 9003-01-4,
Polyacrylic acid 9003-05-8, Polyacrylamide 9003-39-8,
Polyvinyl pyrrolidone 9004-32-4, Carboxymethyl cellulose sodium
salt 9004-34-6D, Cellulose, derivative 9004-62-0, Hydroxyethyl
cellulose 9004-65-3, Hydroxypropyl Methyl cellulose 9004-67-5,
Methyl cellulose 25322-68-3, Peo
RL: MOA (Modifier or additive use); USES (Uses)
(viscosity control agent; binder for lithium-sulfur
battery cathode)

L224 ANSWER 7 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:392927 HCAPLUS

DOCUMENT NUMBER: 139:133917

TITLE: Synthesis of new polymethyloxazoline hydrogels
by the "macroinitiator" method

AUTHOR(S): Rueda, Juan; Suica, Ratl; Komber, Hartmut;
Voit, Brigitte

CORPORATE SOURCE: Direccion Academica de Investigacion,
Pontificia Universidad Catolica del Peru
(PUCP), Lima, Peru

SOURCE: Macromolecular Chemistry and Physics (2003),
204(7), 954-960

CODEN: MCHPES; ISSN: 1022-1352

PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA

DOCUMENT TYPE: Journal

LANGUAGE: English

AB New polymethyloxazoline hydrogels are synthesized by the cationic
ring-opening copolymn. of 2-methyl-2-oxazoline and
2,2'-tetramethylenebis(2-oxazoline), using random copolymers of
chloromethylstyrene and Me methacrylate, or of chloromethylstyrene
and styrene as macroinitiators. The synthesis is carried out in
benzonitrile at 110°C in the presence of potassium iodide,
which activates the chloromethyl group as initiating
functionality. In general, the hydrogels are obtained very
rapidly, with a yield of between 42 and 95 weight-%. Besides its
initiating function, the macroinitiator also provides the
possibility of introducing heterogeneity into the hydrogel
structure by forming rigid hydrophobic domains. The hydrogel
structures were characterized by high-resolution magic angle spinning
NMR spectroscopy, and their solvent absorption capacity was determined
by swelling expts. in solvents of different
polarity. The hydrogels showed a maximal swelling degree of 18 g
of water and 40 g of methanol, resp., per g of the hydrogel.

IT 566203-11-0P 566203-12-1P

RL: PRP (Properties); SPN (Synthetic preparation); PREP
(Preparation)

(hydrogel; synthesis of new polymethyloxazoline hydrogels by
the "macroinitiator" method)

RN 566203-11-0 HCAPLUS

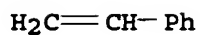
CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with
2,2'-(1,4-butanediyl)bis[4,5-dihydrooxazole], 4,5-dihydro-2-
methyloxazole and ethenylbenzene mono(chloromethyl) deriv. (9CI)
(CA INDEX NAME)

CM 1

CRN 54786-25-3

CMF C9 H9 Cl

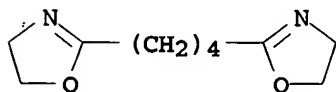
CCI IDS



CM 2

CRN 36931-59-6

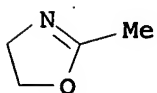
CMF C10 H16 N2 O2



CM 3

CRN 1120-64-5

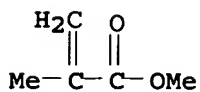
CMF C4 H7 N O



CM 4

CRN 80-62-6

CMF C5 H8 O2

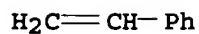


RN 566203-12-1 HCAPLUS

CN Oxazole, 2,2'-(1,4-butanediyl)bis[4,5-dihydro-, polymer with
4,5-dihydro-2-methyloxazole, ethenylbenzene and ethenylbenzene
mono(chloromethyl) deriv. (9CI) (CA INDEX NAME)

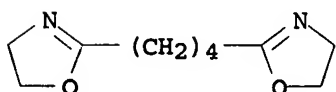
CM 1

CRN 54786-25-3
 CMF C9 H9 Cl
 CCI IDS



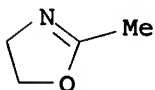
CM 2

CRN 36931-59-6
 CMF C10 H16 N2 O2



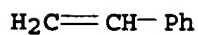
CM 3

CRN 1120-64-5
 CMF C4 H7 N O



CM 4

CRN 100-42-5
 CMF C8 H8



CC 35-7 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 37
 IT Polyamines
 RL: PRP (Properties); SPN (Synthetic preparation); PREP
 (Preparation)
 (polyethylene-, N-acyl; synthesis of new
 polymethyloxazoline hydrogels by the "macroinitiator" method)
 IT 566203-11-0P 566203-12-1P
 RL: PRP (Properties); SPN (Synthetic preparation); PREP

(Preparation)

(hydrogel; synthesis of new polymethyloxazoline hydrogels by the "macroinitiator" method)

REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L224 ANSWER 8 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:222307 HCAPLUS

DOCUMENT NUMBER: 138:239368

TITLE: Method of making an electret from porous
polymer substrates by treatment with water
INVENTOR(S): Chou, Shih-Hung; Wu, Tien Tsung; Mei, Betty
Z.; Schaberg, Mark S.; Buccellato, Gina M.;
Elsbernd, Cheryl L. S.; Guerra, Miguel A.

PATENT ASSIGNEE(S): 3M Innovative Properties Company, USA

SOURCE: U.S. Pat. Appl. Publ., 15 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003054716	A1	20030320	US 2001-949387	2001 0907
WO 2003023796	A2	20030320	WO 2002-US25422	2002 0812
WO 2003023796	A3	20040617		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1451835	A2	20040901	EP 2002-759321	2002 0812
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
JP 2005503013	T2	20050127	JP 2003-527752	2002 0812
PRIORITY APPLN. INFO.:			US 2001-949387	A 2001

0907

WO 2002-US25422

W

2002

0812

AB A method of making an electret includes contacting a porous substrate that includes a polymer with a composition that includes a solvent capable of swelling the polymer, evaporating the solvent from the substrate, and contacting the substrate with water in a manner sufficient to impart an electret charge to the substrate. A melt-blown nonwoven polypropylene fiber web was swollen with a heptane/toluene solvent, then treated with water after evaporation of the solvent.

IT 9002-88-4, Polyethylene

RL: TEM (Technical or engineered material use); USES (Uses) (fiber; method of making an electret from porous polymer substrates by treatment with water)

RN 9002-88-4 HCAPLUS

CN Ethene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 74-85-1

CMF C2 H4

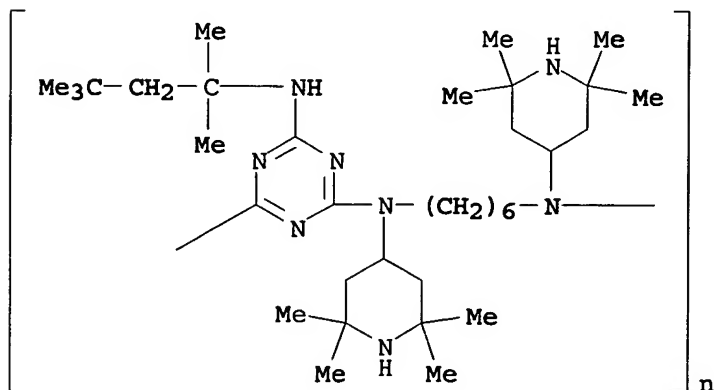
H₂C=CH₂

IT 71878-19-8, Chimassorb 944

RL: MOA (Modifier or additive use); USES (Uses) (method of making an electret from porous polymer substrates by treatment with water)

RN 71878-19-8 HCAPLUS

CN Poly[[6-[(1,1,3,3-tetramethylbutyl)amino]-1,3,5-triazine-2,4-diyl][(2,2,6,6-tetramethyl-4-piperidiny)imino]-1,6-hexanediyl[(2,2,6,6-tetramethyl-4-piperidiny)imino]] (9CI) (CA INDEX NAME)



IC ICM B32B005-02
 ICS B32B027-04; B32B027-12; D04H001-56; B05D001-02
 INCL 442110000; 427421000; 442400000
 CC 40-10 (Textiles and Fibers)
 ST electret nonwoven fabric solvent swelling
 water treatment
 IT 9002-88-4, Polyethylene 9003-53-6, Polystyrene
 25068-26-2, 4-Methyl-1-pentene homopolymer 25085-53-4, Isotactic
 polypropylene
 RL: TEM (Technical or engineered material use); USES (Uses)
 (fiber; method of making an electret from porous polymer
 substrates by treatment with water)
 IT 71878-19-8, Chimassorb 944
 RL: MOA (Modifier or additive use); USES (Uses)
 (method of making an electret from porous polymer substrates by
 treatment with water)

L224 ANSWER 9 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:522255 HCAPLUS

DOCUMENT NUMBER: 137:96277

TITLE: Synthesis and uses of
 polyethyleneimine- and
 polypropyleneimine-based conducting
 polymer electrolytes,
 especially for batteries and fuel cells

INVENTOR(S): Frech, Roger E.; Glatzhofer, Daniel T.

PATENT ASSIGNEE(S): The University of Oklahoma, USA

SOURCE: PCT Int. Appl., 89 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002054515	A2	20020711	WO 2001-US50140	2001 1231
WO 2002054515	A3	20031231		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
CA 2433670	AA	20020711	CA 2001-2433670	2001 1231

WO of
 Inst.
 App

US 2002160271	A1	20021031	US 2001-38782	2001
				1231
EP 1393394	A2	20040303	EP 2001-994419	2001
				1231
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE,				
MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2004525204	T2	20040819	JP 2002-554902	2001
				1231
PRIORITY APPLN. INFO.:			US 2000-258754P	P
				2000
				1229
			WO 2001-US50140	W
				2001
				1231

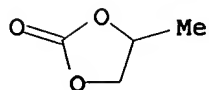
AB A covalently cross-linked polymer electrolyte, present as a continuous thin film (preferably 100-1000 μ thick) with preferred specific conductivity of .gtorsim.10-3 S/cm at 20-100°, has amine groups in the polymer backbone and contains dispersed metal salts (e.g., salts with alkali metals, alk. earth metals, and transition metals). The polymers are preferably selected from substituted or unsubstituted poly(ethyleneimine) and poly(propyleneimine), with repeating unit of general structure $-[X-N[(R1)n/L]]-$, in which R1 is a substituent (H, hydrocarbyl or heterohydrocarbyl) that is free of covalent bonds to the polymer backbone, L is a covalent crosslinking agent, n = 1-2, and X is hydrocarbylene or heterhydrocarbylene (preferably Cl-5-alkylene). The polyethyleneimine or polypropyleneimine can be connected to a second polymer (by the crosslinking agent), such as polyethylene, polypropylene, poly(ethylene oxide), poly(propylene oxide), poly(ethylene sulfide), and poly(propylene sulfide). The polymer electrolyte, which can be swollen by or formulated with a plasticizing solvent, are suitable for use in batteries, fuel cells, sensors, supercapacitors, and electrochromic devices. The unsubstituted polyethyleneimine and polypropyleneimine were prepared by ring-opening polymerization of 2-methyloxazoline and 5,6-dihydro-4H-1,3-oxazine, resp., followed by hydrolysis.

IT 108-32-7, Propylene carbonate
 2926-30-9, Sodium triflate 33454-82-9, Lithium triflate 90076-65-6, Lithium bis(trifluoromethylsulfonylimide)
 RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
 (polymer electrolyte containing; synthesis and uses of polyethyleneimine- and

polypropyleneimine-based conducting polymer
electrolytes, especially for batteries and fuel cells)

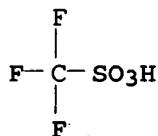
RN 108-32-7 HCAPLUS

CN 1,3-Dioxolan-2-one, 4-methyl- (9CI) (CA INDEX NAME)



RN 2926-30-9 HCAPLUS

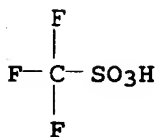
CN Methanesulfonic acid, trifluoro-, sodium salt (8CI, 9CI) (CA INDEX NAME)



● Na

RN 33454-82-9 HCAPLUS

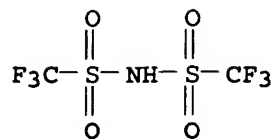
CN Methanesulfonic acid, trifluoro-, lithium salt (8CI, 9CI) (CA INDEX NAME)



● Li

RN 90076-65-6 HCAPLUS

CN Methanesulfonamide, 1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl]-, lithium salt (9CI) (CA INDEX NAME)

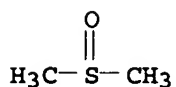


● Li

IT 67-68-5, DMSO, uses 7447-39-4, Copper
chloride (CuCl₂), uses
RL: TEM (Technical or engineered material use); USES (Uses)
(polymer electrolyte containing; synthesis and
uses of polyethyleneimine- and
polypropyleneimine-based conducting polymer
electrolytes, especially for batteries and fuel cells)

RN 67-68-5 HCAPLUS

CN Methane, sulfinylbis- (9CI) (CA INDEX NAME)



RN 7447-39-4 HCAPLUS

CN Copper chloride (CuCl₂) (8CI, 9CI) (CA INDEX NAME)

Cl-Cu-Cl

IT 441353-87-3P 441353-88-4P 441353-89-5P
RL: RCT (Reactant); SPN (Synthetic preparation); TEM (Technical or
engineered material use); PREP (Preparation); RACT (Reactant or
reagent); USES (Uses)
(polymer electrolyte; synthesis and uses of
polyethyleneimine- and polypropyleneimine
-based conducting polymer electrolytes,
especially for batteries and fuel cells)

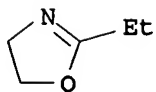
RN 441353-87-3 HCAPLUS

CN Oxazole, 2-ethyl-4,5-dihydro-, polymer with 1,6-dibromohexane
(9CI) (CA INDEX NAME)

CM 1

CRN 10431-98-8

CMF C5 H9 N O



CM 2

CRN 629-03-8

CMF C6 H12 Br2

Br-(CH₂)₆-Br

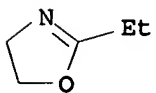
RN 441353-88-4 HCAPLUS

CN Oxazole, 2-ethyl-4,5-dihydro-, polymer with 1,3-dibromopropane
(9CI) (CA INDEX NAME)

CM 1

CRN 10431-98-8

CMF C5 H9 N O



CM 2

CRN 109-64-8

CMF C3 H6 Br2

Br-CH₂-CH₂-CH₂-Br

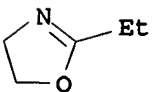
RN 441353-89-5 HCAPLUS

CN Oxazole, 2-ethyl-4,5-dihydro-, polymer with 1,1,3,3-tetramethoxypropane (9CI) (CA INDEX NAME)

CM 1

CRN 10431-98-8

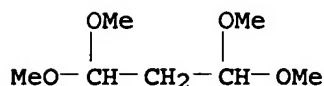
CMF C5 H9 N O



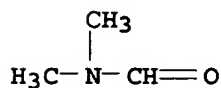
CM 2

CRN 102-52-3

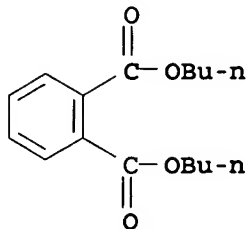
CMF C7 H16 O4



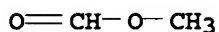
IT 68-12-2, Dimethylformamide, uses 84-74-2,
 Dibutyl phthalate 107-31-3,
 Methyl formate 110-71-4,
 1,2-Dimethoxyethane 111-96-6, Diglyme
 112-15-2, 2-(2-Ethoxyethoxy)ethyl acetate 112-49-2
 , Triglyme 126-33-0, Sulfolane
 127-19-5, Dimethylacetamide 143-24-8,
 Tetraglyme 556-65-0, Lithium thiocyanate
 627-93-0, Dimethyl adipate
 7439-93-2D, Lithium, salts with
 polyethyleneimines and polypropyleneimines
 7440-02-0D, Nickel, salts with
 polyethyleneimines and polypropyleneimines
 7440-09-7D, Potassium, salts with
 polyethyleneimines and polypropyleneimines
 7440-17-7D, Rubidium, salts with
 polyethyleneimines and polypropyleneimines
 7440-18-8D, Ruthenium, salts with
 polyethyleneimines and polypropyleneimines
 7440-22-4D, Silver, salts with
 polyethyleneimines and polypropyleneimines
 7440-23-5D, Sodium, salts with
 polyethyleneimines and polypropyleneimines
 7440-50-8D, Copper, salts with
 polyethyleneimines and polypropyleneimines
 7791-03-9, Lithium perchlorate 14283-07-9,
 Lithium tetrafluoroborate 18424-17-4, Lithium
 hexafluoroantimonate 21324-40-3, Lithium
 hexafluorophosphate 29935-35-1, Lithium
 hexafluoroarsenate
 RL: TEM (Technical or engineered material use); USES (Uses)
 (polymer electrolytes containing; synthesis and
 uses of polyethyleneimine- and
 polypropyleneimine-based conducting polymer
 electrolytes, especially for batteries and fuel cells)
 RN 68-12-2 HCAPLUS
 CN Formamide, N,N-dimethyl- (8CI, 9CI) (CA INDEX NAME)



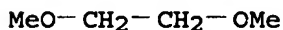
RN 84-74-2 HCAPLUS
CN 1,2-Benzenedicarboxylic acid, dibutyl ester (9CI) (CA INDEX NAME)



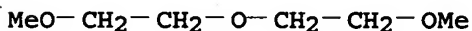
RN 107-31-3 HCAPLUS
CN Formic acid, methyl ester (6CI, 8CI, 9CI) (CA INDEX NAME)



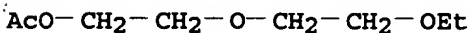
RN 110-71-4 HCAPLUS
CN Ethane, 1,2-dimethoxy- (8CI, 9CI) (CA INDEX NAME)



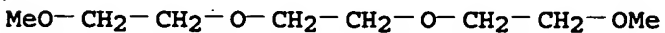
RN 111-96-6 HCAPLUS
CN Ethane, 1,1'-oxybis[2-methoxy- (9CI) (CA INDEX NAME)



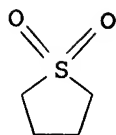
RN 112-15-2 HCAPLUS
CN Ethanol, 2-(2-ethoxyethoxy)-, acetate (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 112-49-2 HCAPLUS
CN 2,5,8,11-Tetraoxadodecane (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 126-33-0 HCAPLUS
CN Thiophene, tetrahydro-, 1,1-dioxide (8CI, 9CI) (CA INDEX NAME)


$$\begin{array}{c} \text{Me} \\ | \\ \text{Me}-\text{N}-\text{Ac} \end{array}$$
$$\text{MeO}-\text{CH}_2-\text{CH}_2-\text{O}-\text{CH}_2-\text{CH}_2-\text{O}-\text{CH}_2-\text{CH}_2-\text{O}-\text{CH}_2-\text{CH}_2-\text{OMe}$$
$$\text{HS}-\text{C}\equiv\text{N}$$

● Li

$$\text{MeO}-\overset{\overset{\text{O}}{\parallel}}{\text{C}}-(\text{CH}_2)_4-\overset{\overset{\text{O}}{\parallel}}{\text{C}}-\text{OMe}$$

Li

571-272-2538

Ni

RN 7440-09-7 HCAPLUS
CN Potassium (8CI, 9CI) (CA INDEX NAME)

K

RN 7440-17-7 HCAPLUS
CN Rubidium (8CI, 9CI) (CA INDEX NAME)

Rb

RN 7440-18-8 HCAPLUS
CN Ruthenium (8CI, 9CI) (CA INDEX NAME)

Ru

RN 7440-22-4 HCAPLUS
CN Silver (8CI, 9CI) (CA INDEX NAME)

Ag

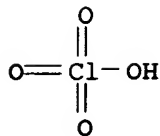
RN 7440-23-5 HCAPLUS
CN Sodium (8CI, 9CI) (CA INDEX NAME)

Na

RN 7440-50-8 HCAPLUS
CN Copper (7CI, 8CI, 9CI) (CA INDEX NAME)

Cu

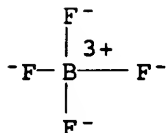
RN 7791-03-9 HCAPLUS
CN Perchloric acid, lithium salt (8CI, 9CI) (CA INDEX NAME)



● Li

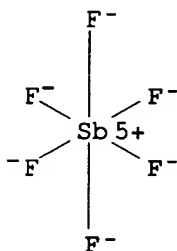
RN 14283-07-9 HCAPLUS

CN Borate(1-), tetrafluoro-, lithium (8CI, 9CI) (CA INDEX NAME)

● Li⁺

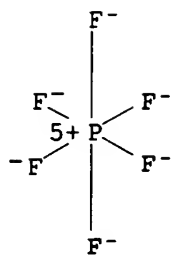
RN 18424-17-4 HCAPLUS

CN Antimonate(1-), hexafluoro-, lithium, (OC-6-11)- (9CI) (CA INDEX NAME)

● Li⁺

RN 21324-40-3 HCAPLUS

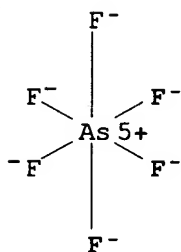
CN Phosphate(1-), hexafluoro-, lithium (8CI, 9CI) (CA INDEX NAME)



● Li⁺

RN 29935-35-1 HCAPLUS

CN Arsenate(1-), hexafluoro-, lithium (8CI, 9CI) (CA INDEX NAME)



● Li⁺

IT 26375-28-0P, 2-Methyloxazoline homopolymer
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP
 (Preparation); RACT (Reactant or reagent)
 (starting material; synthesis and uses of
 polyethyleneimine- and polypropyleneimine
 -based conducting polymer electrolytes,
 especially for batteries and fuel cells)

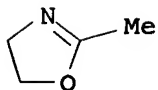
RN 26375-28-0 HCAPLUS

CN Oxazole, 4,5-dihydro-2-methyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 1120-64-5

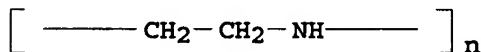
CMF C4 H7 N O



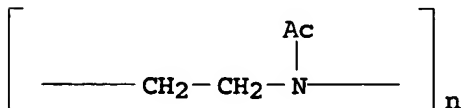
IT 9002-98-6P, Aziridine, homopolymer 26913-06-4P,
 Poly[imino(1,2-ethanediyl)]
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP
 (Preparation); RACT (Reactant or reagent)
 (synthesis and functionalization of; synthesis and uses of
 polyethyleneimine- and polypropyleneimine
 -based conducting polymer electrolytes,
 especially for batteries and fuel cells)
 RN 9002-98-6 HCAPLUS
 CN Aziridine, homopolymer (9CI) (CA INDEX NAME)
 CM 1
 CRN 151-56-4
 CMF C2 H5 N



RN 26913-06-4 HCAPLUS
 CN Poly[imino(1,2-ethanediyl)] (9CI) (CA INDEX NAME)



IT 38796-76-8P, Poly[(acetylimino)(1,2-ethanediyl)]
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP
 (Preparation); RACT (Reactant or reagent)
 (synthesis and in-situ hydrolysis of; synthesis and uses of
 polyethyleneimine- and polypropyleneimine
 -based conducting polymer electrolytes,
 especially for batteries and fuel cells)
 RN 38796-76-8 HCAPLUS
 CN Poly[(acetylimino)(1,2-ethanediyl)] (9CI) (CA INDEX NAME)



IT 26338-45-4P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP
 (Preparation); RACT (Reactant or reagent)

(synthesis and reactions of; synthesis and uses of
polyethyleneimine- and polypropyleneimine
 -based conducting **polymer electrolytes**,
 especially for batteries and fuel cells)

RN 26338-45-4 HCAPLUS

CN Aziridine, homopolymer, hydrochloride (9CI) (CA INDEX NAME)

CM 1

CRN 9002-98-6

CMF (C2 H5 N)x

CCI PMS

CM 2

CRN 151-56-4

CMF C2 H5 N



IC ICM H01M006-18

ICS H01M010-40; H01M008-10; H01B001-12; C08G073-02; B01D071-60;
 B01D069-12

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology);
 Section cross-reference(s): 38, 72, 76

ST **polyethyleneimine polypropyleneimine**
conducting polymer electrolyte; battery
polymer electrolyte crosslinked
functionalized polyethyleneimine; fuel cell
polymer electrolyte crosslinked
functionalized polyethyleneimine; metal salt
crosslinked polyethyleneimine polymer
electrolyte

IT Superconductor devices

(capacitors, **polymer electrolytes** for;
 synthesis and uses of **polyethyleneimine- and**
polypropyleneimine-based conducting polymer
electrolytes, especially for batteries and fuel cells)

IT Conducting polymers

(**electrolytes; synthesis and uses of**
polyethyleneimine- and polypropyleneimine
-based conducting polymer electrolytes,
especially for batteries and fuel cells)

IT Glycols, uses

RL: TEM (Technical or engineered material use); USES (Uses)
 (ethers, **polymer electrolytes** containing;
 synthesis and uses of **polyethyleneimine- and**
polypropyleneimine-based conducting polymer
electrolytes, especially for batteries and fuel cells)

IT Ethers, uses

RL: TEM (Technical or engineered material use); USES (Uses)
 (glycol, **polymer electrolytes** containing;

- synthesis and uses of polyethyleneimine- and polypropyleneimine-based conducting polymer electrolytes, especially for batteries and fuel cells)
- IT Esters, uses
Nitriles, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(polymer electrolytes containing; synthesis and uses of polyethyleneimine- and polypropyleneimine-based conducting polymer electrolytes, especially for batteries and fuel cells)
- IT Electrochromic devices
Sensors
(polymer electrolytes for; synthesis and uses of polyethyleneimine- and polypropyleneimine-based conducting polymer electrolytes, especially for batteries and fuel cells)
- IT Battery electrolytes
Fuel cell electrolytes
(polymeric; synthesis and uses of polyethyleneimine- and polypropyleneimine-based conducting polymer electrolytes, especially for batteries and fuel cells)
- IT Polymerization
(ring-opening; synthesis and uses of polyethyleneimine- and polypropyleneimine-based conducting polymer electrolytes, especially for batteries and fuel cells)
- IT Alkali metal salts
Alkaline earth salts
Transition metal salts
RL: TEM (Technical or engineered material use); USES (Uses)
(salts with polyethyleneimines and polypropyleneimines, polymer electrolytes containing; synthesis and uses of polyethyleneimine- and polypropyleneimine-based conducting polymer electrolytes, especially for batteries and fuel cells)
- IT Capacitors
(superconducting, polymer electrolytes for; synthesis and uses of polyethyleneimine- and polypropyleneimine-based conducting polymer electrolytes, especially for batteries and fuel cells)
- IT Polyamines
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(synthesis and crosslinking of; synthesis and uses of polyethyleneimine- and polypropyleneimine-based conducting polymer electrolytes, especially for batteries and fuel cells)
- IT Polymer electrolytes
(synthesis and uses of polyethyleneimine- and polypropyleneimine-based conducting polymer electrolytes, especially for batteries and fuel cells)
- IT 108-32-7, Propylene carbonate
872-50-4, N-Methylpyrrolidone, uses 2926-30-9, Sodium triflate 7664-38-2, Phosphoric acid, uses 33454-82-9,

- Lithium triflate 90076-65-6, Lithium bis(trifluoromethylsulfonylimide)
 RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
 (polymer electrolyte containing; synthesis and uses of polyethyleneimine- and polypropyleneimine-based conducting polymer electrolytes, especially for batteries and fuel cells)
- IT 67-68-5, DMSO, uses 7447-39-4, Copper chloride (CuCl₂), uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (polymer electrolyte containing; synthesis and uses of polyethyleneimine- and polypropyleneimine-based conducting polymer electrolytes, especially for batteries and fuel cells)
- IT 441353-87-3P 441353-88-4P 441353-89-5P
 RL: RCT (Reactant); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
 (polymer electrolyte; synthesis and uses of polyethyleneimine- and polypropyleneimine-based conducting polymer electrolytes, especially for batteries and fuel cells)
- IT 441353-97-5P
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (polymer electrolyte; synthesis and uses of polyethyleneimine- and polypropyleneimine-based conducting polymer electrolytes, especially for batteries and fuel cells)
- IT 64-19-7, Acetic acid, uses 68-12-2, Dimethylformamide, uses 79-10-7D, Acrylic acid, esters 84-74-2, Dibutyl phthalate 107-31-3, Methyl formate 110-71-4, 1,2-Dimethoxyethane 111-96-6, Diglyme 112-15-2, 2-(2-Ethoxyethoxy)ethyl acetate 112-49-2, Triglyme 126-33-0, Sulfolane 127-19-5, Dimethylacetamide 143-24-8, Tetraglyme 1463-79-6D, Carbonic acid, esters 556-65-0, Lithium thiocyanate 627-93-0, Dimethyl adipate 1493-13-6, Triflic acid 7439-93-2D, Lithium, salts with polyethyleneimines and polypropyleneimines 7440-02-0D, Nickel, salts with polyethyleneimines and polypropyleneimines 7440-09-7D, Potassium, salts with polyethyleneimines and polypropyleneimines 7440-17-7D, Rubidium, salts with polyethyleneimines and polypropyleneimines 7440-18-8D, Ruthenium, salts with polyethyleneimines and polypropyleneimines 7440-22-4D, Silver, salts with polyethyleneimines and polypropyleneimines 7440-23-5D, Sodium, salts with polyethyleneimines and polypropyleneimines 7440-46-2D, Cesium, salts with

polyethyleneimines and polypropyleneimines
7440-50-8D, Copper, salts with
polyethyleneimines and polypropyleneimines
7664-38-2D, Phosphoric acid, esters 7664-93-9D, Sulfuric acid,
esters 7791-03-9, Lithium perchlorate 10043-35-3D,
Boric acid (H₃BO₃), esters 14283-07-9, Lithium
tetrafluoroborate 18424-17-4, Lithium
hexafluoroantimonate 21324-40-3, Lithium
hexafluorophosphate 29935-35-1, Lithium
hexafluoroarsenate

RL: TEM (Technical or engineered material use); USES (Uses)
(polymer electrolytes containing; synthesis and
uses of polyethyleneimine- and
polypropyleneimine-based conducting polymer
electrolytes, especially for batteries and fuel cells)

IT 26375-28-0P, 2-Methyloxazoline homopolymer
RL: RCT (Reactant); SPN (Synthetic preparation); PREP
(Preparation); RACT (Reactant or reagent)
(starting material; synthesis and uses of
polyethyleneimine- and polypropyleneimine
-based conducting polymer electrolytes,
especially for batteries and fuel cells)

IT 16024-56-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP
(Preparation); RACT (Reactant or reagent)
(synthesis and crosslinking of; synthesis and uses of
polyethyleneimine- and polypropyleneimine
-based conducting polymer electrolytes,
especially for batteries and fuel cells)

IT 107-13-1DP, 2-Propenenitrile, reaction products with polyamines
1120-71-4DP, reaction products with polyamines
RL: SPN (Synthetic preparation); PREP (Preparation)
(synthesis and crosslinking of; synthesis and uses of
polyethyleneimine- and polypropyleneimine
-based conducting polymer electrolytes,
especially for batteries and fuel cells)

IT 9002-98-6P, Aziridine, homopolymer 26913-06-4P,
Poly[imino(1,2-ethanediyl)]
RL: RCT (Reactant); SPN (Synthetic preparation); PREP
(Preparation); RACT (Reactant or reagent)
(synthesis and functionalization of; synthesis and uses of
polyethyleneimine- and polypropyleneimine
-based conducting polymer electrolytes,
especially for batteries and fuel cells)

IT 38796-76-8P, Poly[(acetylimino)(1,2-ethanediyl)]
RL: RCT (Reactant); SPN (Synthetic preparation); PREP
(Preparation); RACT (Reactant or reagent)
(synthesis and in-situ hydrolysis of; synthesis and uses of
polyethyleneimine- and polypropyleneimine
-based conducting polymer electrolytes,
especially for batteries and fuel cells)

IT 26338-45-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP
(Preparation); RACT (Reactant or reagent)
(synthesis and reactions of; synthesis and uses of
polyethyleneimine- and polypropyleneimine

-based conducting polymer electrolytes,
especially for batteries and fuel cells)

L224 ANSWER 10 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2002:163852 HCAPLUS
 DOCUMENT NUMBER: 136:227934
 TITLE: Improved membrane transport and transfection
 by polynucleotide compositions comprising
 polyether-polycation copolymers
 INVENTOR(S): Kabanov, Alexander Victorovich; Alakov, Valery
 Yulievich; Vingogradov, Sergey V.
 PATENT ASSIGNEE(S): Supratek Pharma Inc., Can.
 SOURCE: U.S., 23 pp., Cont.-in-part of U. S.
 5,656,611.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 6
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6353055	B1	20020305	US 1997-912968	1997 0801
US 5656611	A	19970812	US 1994-342209	1994 1118
CA 2205486	AA	19960530	CA 1995-2205486	1995 1117
CN 1173128	A	19980211	CN 1995-197357	1995 1117
US 6221959	B1	20010424	US 1998-124943	1998 0730
CA 2298061	AA	19990211	CA 1998-2298061	1998 0731
WO 9906055	A1	19990211	WO 1998-US16012	1998 0731
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 9886806	A1	19990222	AU 1998-86806	1998 0731

EP 1003527	A1	20000531	EP 1998-938235	1998 0731
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
JP 2003526692	T2	20030909	JP 2000-504868	1998 0731
US 6359054	B1	20020319	US 1999-227364	1999 0108
US 6440743	B1	20020827	US 1999-320640	1999 0526
US 2003198678	A1	20031023	US 2002-164875	2002 0607
PRIORITY APPLN. INFO.:			US 1994-342209	A2 1994 1118
			US 1997-912968	A2 1997 0801
			US 1998-124943	A 1998 0730
			WO 1998-US16012	W 1998 0731
			US 1999-320640	A3 1999 0526

AB The invention provides compns. for stabilizing polynucleic acids and increasing the ability of polynucleic acids to cross cell membranes and act in the interior of a cell. In one aspect, the invention provides a polynucleotide complex between a polynucleotide and certain polyether block copolymers. Preferably, the polynucleotide complex will further include a polycationic polymer. The compns. can further include suitable targeting mols. and surfactants. In another aspect, the invention provides a polynucleotide complex between a polynucleotide and a block copolymer comprising a polyether block and a polycation block. The polynucleotides may also be modified at their 5' or 3' end to attach a polyether polymer segment. Thus, the uptake and transfection efficiency of plasmid p β -Gal in NIH 3T3 cells is improved 18.8-fold by including the triblock copolymer Pluronic A and poly(N-ethyl-4-vinylpyridinium bromide) as polycation. Similarly, diblock copolymers of polyoxyethylene-polypropyleneimine/butyleneimine or polyoxyethylene-poly(L-alanine-L-lysine) improve the stability, cell incorporation efficiency, plasma life, and in vivo inhibition of herpes simplex virus by

antisense oligonucleotides.

IT 179184-75-9 742087-14-5

RL: BUU (Biological use, unclassified); BIOL (Biological study);

USES (Uses)

(diblock; improved membrane transport and transfection by
polynucleotide compns. comprising polyether-polycation
copolymers)

RN 179184-75-9 HCAPLUS

CN Pyrrolidine, polymer with azetidine and oxirane, block (9CI) (CA
INDEX NAME)

CM 1

CRN 503-29-7

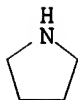
CMF C3 H7 N



CM 2

CRN 123-75-1

CMF C4 H9 N



CM 3

CRN 75-21-8

CMF C2 H4 O



RN 742087-14-5 HCAPLUS

CN Pyrrolidine, polymer with azetidine and oxirane, diblock (9CI)
(CA INDEX NAME)

CM 1

CRN 503-29-7

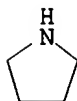
CMF C3 H7 N



CM 2

CRN 123-75-1

CMF C4 H9 N



CM 3

CRN 75-21-8

CMF C2 H4 O



IT 402821-30-1P

RL: BUU (Biological use, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)

(diblock; improved membrane transport and transfection by polynucleotide compns. comprising polyether-polycation copolymers)

RN 402821-30-1 HCAPLUS

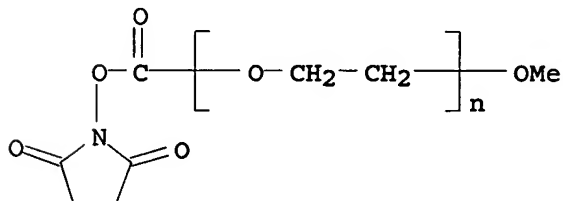
CN Aziridine, polymer with α -[[(2,5-dioxo-1-pyrrolidinyl)oxy]carbonyl]- ω -methoxypoly(oxy-1,2-ethanediyl), block (9CI) (CA INDEX NAME)

CM 1

CRN 135649-01-3

CMF (C2 H4 O)_n C6 H7 N O5

CCI PMS



CM 2

CRN 151-56-4

CMF C2 H5 N



IT 110541-27-0P 123000-72-6P 160796-34-9P

220571-04-0P 402821-31-2P

RL: BUU (Biological use, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)

(improved membrane transport and transfection by polynucleotide compns. comprising polyether-polycation copolymers)

RN 110541-27-0 HCAPLUS

CN Aziridine, polymer with methyloxirane and oxirane, block (9CI)
(CA INDEX NAME)

CM 1

CRN 151-56-4

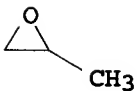
CMF C2 H5 N



CM 2

CRN 75-56-9

CMF C3 H6 O



CM 3

CRN 75-21-8

CMF C2 H4 O



RN 123000-72-6 HCAPLUS
CN Aziridine, polymer with oxirane, block, graft (9CI) (CA INDEX NAME)

CM 1

CRN 151-56-4

CMF C2 H5 N



CM 2

CRN 75-21-8

CMF C2 H4 O



RN 160796-34-9 HCAPLUS
CN Aziridine, polymer with oxirane, block (9CI) (CA INDEX NAME)

CM 1

CRN 151-56-4

CMF C2 H5 N



CM 2

CRN 75-21-8

CMF C2 H4 O



RN 220571-04-0 HCAPLUS
CN 1,3-Propanediamine, N-(3-aminopropyl)-, polymer with
1,4-dibromobutane (9CI) (CA INDEX NAME)

CM 1

CRN 110-52-1
CMF C4 H8 Br2

$\text{Br}-(\text{CH}_2)_4-\text{Br}$

CM 2

CRN 56-18-8
CMF C6 H17 N3

$\text{H}_2\text{N}-(\text{CH}_2)_3-\text{NH}-(\text{CH}_2)_3-\text{NH}_2$

RN 402821-31-2 HCAPLUS
CN L-Lysine, polymer with aziridine, methyloxirane and oxirane, block
(9CI) (CA INDEX NAME)

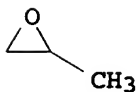
CM 1

CRN 151-56-4
CMF C2 H5 N



CM 2

CRN 75-56-9
CMF C3 H6 O



CM 3

CRN 75-21-8
CMF C2 H4 O

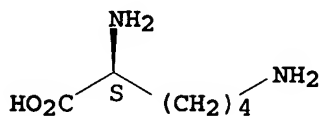


CM 4

CRN 56-87-1

CMF C6 H14 N2 O2

Absolute stereochemistry.



IT 9002-98-6 25322-68-3, Poly(ethylene glycol) 26913-06-4, Poly[imino(1,2-ethanediyl)]
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (improved membrane transport and transfection by polynucleotide compns. comprising polyether-polycation copolymers)

RN 9002-98-6 HCAPLUS

CN Aziridine, homopolymer (9CI) (CA INDEX NAME)

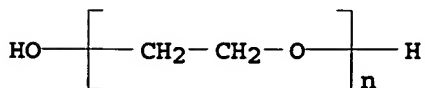
CM 1

CRN 151-56-4

CMF C2 H5 N

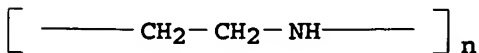


RN 25322-68-3 HCAPLUS

CN Poly(oxy-1,2-ethanediyl), α -hydro- ω -hydroxy- (9CI)
 (CA INDEX NAME)

RN 26913-06-4 HCAPLUS

CN Poly[imino(1,2-ethanediyl)] (9CI) (CA INDEX NAME)



IC ICM C08L053-00
ICS C07H021-04; A61K031-70
INCL 525-92A
CC 3-2 (Biochemical Genetics)
Section cross-reference(s): 35
IT 159405-62-6 179184-74-8 179184-75-9 742087-13-4
742087-14-5 745048-27-5
RL: BUU (Biological use, unclassified); BIOL (Biological study);
USES (Uses)
(diblock; improved membrane transport and transfection by
polynucleotide compns. comprising polyether-polycation
copolymers)
IT 402821-29-8P 402821-30-1P
RL: BUU (Biological use, unclassified); SPN (Synthetic
preparation); BIOL (Biological study); PREP (Preparation); USES
(Uses)
(diblock; improved membrane transport and transfection by
polynucleotide compns. comprising polyether-polycation
copolymers)
IT 71052-31-8P 110541-27-0P 123000-72-6P
143073-46-5P 160796-34-9P 220571-04-0P
402821-31-2P 402905-18-4DP, conjugates with diblock
phosphonate-adenosine block copolymers
RL: BUU (Biological use, unclassified); SPN (Synthetic
preparation); BIOL (Biological study); PREP (Preparation); USES
(Uses)
(improved membrane transport and transfection by polynucleotide
compns. comprising polyether-polycation copolymers)
IT 71-44-3, N,N'-Bis[3-aminopropyl]1,4-butanediamine 102-52-3;
Malonaldehyde bis(dimethyl acetal) 107-88-0,
1,3-Butanediol 9002-98-6 25104-18-1, Poly(L-lysine)
25322-68-3, Poly(ethylene glycol)
26913-06-4, Poly[imino(1,2-ethanediyl)] 38000-06-5,
Poly(L-lysine) 40615-36-9 135649-01-3 288306-29-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(improved membrane transport and transfection by polynucleotide
compns. comprising polyether-polycation copolymers)
REFERENCE COUNT: 151 THERE ARE 151 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L224 ANSWER 11 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2001:850914 HCAPLUS
DOCUMENT NUMBER: 135:376692
TITLE: Vaccine composition, method of preparing the
same, and method of vaccinating vertebrates
INVENTOR(S): Bowersock, Terry L.; Guimond, Paul; Ju,
Tzu-Chi R.; Kidane, Argaw
PATENT ASSIGNEE(S): Pharmacia & Upjohn Co., USA
SOURCE: PCT Int. Appl., 61 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001087270	A2	20011122	WO 2001-US15235	2001 0511
WO 2001087270	A3	20020516		
WO 2001087270	B1	20020815		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 2001061433	A5	20011126	AU 2001-61433	2001 0511
US 2002009457	A1	20020124	US 2001-853919	2001 0511
US 6656470	B2	20031202		
EP 1280521	A2	20030205	EP 2001-935330	2001 0511
EP 1280521	B1	20050720		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
EP 1537860	A1	20050608	EP 2005-5507	2001 0511
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR				
EP 1541132	A1	20050615	EP 2005-5506	2001 0511
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR				
AT 299696	E	20050815	AT 2001-935330	2001 0511
US 2004071727	A1	20040415	US 2003-705660	2003 1110
PRIORITY APPLN. INFO.:				2000 0512
US 2000-203864P				P
EP 2001-935330				A3
				2001 0511

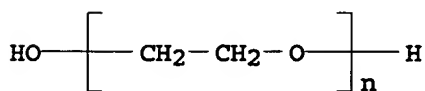
US 2001-853919 A3
2001
0511

WO 2001-US15235 W
2001
0511

AB The invention provides a vaccine composition and a method of preparation including the steps of: forming a water-in-oil emulsion including an alginate in water, an oil, an antigen, and either (a) a cellulose ether and at least one nonionic surfactant or (b) a PEO-PPO-PEO triblock copolymer surfactant and at least one nonionic surfactant; followed by crosslinking the alginate in the emulsion with at least two cations selected from the group consisting of aluminum, barium, calcium, lithium, manganese, strontium, and zinc, to form antigen-containing, crosslinked alginate microparticles; and harvesting the microparticles. Another aspect of the invention is a method of vaccinating a vertebrate species including the step of administering to the species a vaccine composition prepared according to the method of the invention. The compns. of the invention have improved antigen loading, reduced microparticle size, increased hydrophobicity, improved uptake by antigen sampling cells, controlled antigen release characteristics, and improved immunogenicity.

IT 25322-68-3
RL: PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(surfactants; vaccine composition, method of preparing same, and method of vaccinating vertebrates)

RN 25322-68-3 HCAPLUS
CN Poly(oxy-1,2-ethanediyl), α -hydro- ω -hydroxy- (9CI)
(CA INDEX NAME)



IT 7439-93-2, Lithium, biological studies 9002-98-6
26913-06-4, Poly[imino(1,2-ethanediyl)]
RL: PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)

(vaccine composition, method of preparing same, and method of vaccinating vertebrates)

RN 7439-93-2 HCAPLUS
CN Lithium (7CI, 8CI, 9CI) (CA INDEX NAME)

Li

RN 9002-98-6 HCAPLUS
 CN Aziridine, homopolymer (9CI) (CA INDEX NAME)

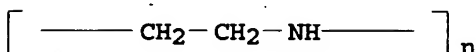
CM 1

CRN 151-56-4

CMF C2 H5 N



RN 26913-06-4 HCAPLUS
 CN Poly[imino(1,2-ethanediyl)] (9CI) (CA INDEX NAME)



IC ICM A61K009-16

ICS A61K039-00

CC 63-3 (Pharmaceuticals)

Section cross-reference(s): 15

IT **Crosslinking agents**

Vaccines

(vaccine composition, method of preparing same, and method of vaccinating vertebrates)

IT 106392-12-5, Poly(ethylene oxide)-

poly(propylene oxide) block copolymer

RL: PEP (Physical, engineering or chemical process); THU

(Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)

(surfactant; vaccine composition, method of preparing same, and method of vaccinating vertebrates)

IT 12441-09-7D, Anhydrosorbitol, esters 25322-68-3

RL: PEP (Physical, engineering or chemical process); THU

(Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)

(surfactants; vaccine composition, method of preparing same, and method of vaccinating vertebrates)

IT 7429-90-5, Aluminum, biological studies 7439-93-2,

Lithium, biological studies 7439-96-5, Manganese, biological

studies 7440-24-6, Strontium, biological studies 7440-39-3,

Barium, biological studies 7440-66-6, Zinc, biological studies

7440-70-2, Calcium, biological studies 7732-18-5, Water,

biological studies 9002-98-6 9004-34-6D, Cellulose,

ethers, biological studies 9004-57-3, Ethyl cellulose

9004-64-2, Hydroxypropylcellulose 9004-65-3,

Hydroxypropylmethylcellulose 9004-67-5, Methyl cellulose

9005-32-7D, Alginate acid, derivs. 24937-47-1, Polyarginine

25104-18-1, Poly-L-lysine 25212-18-4, Polyarginine 26062-48-6,

Polyhistidine 26266-58-0, Sorbitan trioleate 26854-81-9,

Polyhistidine 26913-06-4, Poly[imino(1,2-ethanediyl)]
 37353-59-6, Hydroxymethylcellulose 38000-06-5, Poly-L-lysine
 RL: PEP (Physical, engineering or chemical process); THU
 (Therapeutic use); BIOL (Biological study); PROC (Process); USES
 (Uses)
 (vaccine composition, method of preparing same, and method of
 vaccinating vertebrates)

L224 ANSWER 12 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:816863 HCAPLUS

DOCUMENT NUMBER: 135:370620

TITLE: Compositions and methods for inducing
 activation of dendritic cells

INVENTOR(S): Kabanov, Alexander V.; Lemieux, Pierre;
 Guerin, Nadia; Alakhov, Valery; Vinogradov,
 Serguie

PATENT ASSIGNEE(S): Supratek Pharma, Inc., Can.

SOURCE: PCT Int. Appl., 126 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001083698	A2	20011108	WO 2001-US13921	2001 0430
WO 2001083698	A3	20020221		
W:			AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM	
RW:			GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG	
CA 2407700	AA	20011108	CA 2001-2407700	2001 0430
AU 2001074815	A5	20011112	AU 2001-74815	2001 0430
EP 1283727	A2	20030219	EP 2001-941463	2001 0430
			R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR	
JP 2004509838	T2	20040402	JP 2001-580308	2001 0430

PRIORITY APPLN. INFO.:

US 2000-200487P

P

2000
0428

US 2001-260806P

P

2001
0101

WO 2001-US13921

W

2001
0430

AB Compns. induce the activation of dendritic cells comprising a polynucleotide, such as viruses, RNA, DNA, plasmid DNA, or derivs. thereof and at least one block copolymer of alkylethers. The present invention further relates to compns. for inducing the activation of dendritic cells wherein the block copolymers are PLURONIC F127 and L61. More particularly, the compns. comprise block copolymers PLURONIC F127/PLURONIC L61. The invention also relates to methods of inducing the activation of dendritic cells in animals comprising administering the compns. of the invention. Addnl., the present invention relates to methods of increasing the immune response of animals comprising administering the compns. of the present invention.

IT 220571-05-1P

RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(polycationic; vaccine compns. containing antigen-encoding polynucleotide and block copolymer for inducing activation of dendritic cells and for treating cancer or infection)

RN 220571-05-1 HCAPLUS

CN Propanedial, polymer with N,N'-bis(3-aminopropyl)-1,4-butanediamine (9CI) (CA INDEX NAME)

CM 1

CRN 542-78-9

CMF C3 H4 O2



CM 2

CRN 71-44-3

CMF C10 H26 N4



IT 542-78-9P, Malonaldehyde

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(vaccine compns. containing antigen-encoding polynucleotide and block copolymer for inducing activation of dendritic cells and for treating cancer or infection)

RN 542-78-9 HCAPLUS

CN Propanedial (9CI) (CA INDEX NAME)



IT 25322-68-3P 111265-31-7P 179184-75-9P

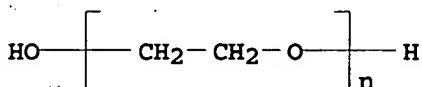
220571-04-0P 220571-17-5P

RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(vaccine compns. containing antigen-encoding polynucleotide and block copolymer for inducing activation of dendritic cells and for treating cancer or infection)

RN 25322-68-3 HCAPLUS

CN Poly(oxy-1,2-ethanediyl), α -hydro- ω -hydroxy- (9CI)
(CA INDEX NAME)



RN 111265-31-7 HCAPLUS

CN Aziridine, polymer with methyloxirane and oxirane, block, graft
(9CI) (CA INDEX NAME)

CM 1

CRN 151-56-4

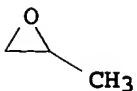
CMF C2 H5 N



CM 2

CRN 75-56-9

CMF C3 H6 O



CM 3

CRN 75-21-8
CMF C2 H4 O



RN 179184-75-9 HCAPLUS
CN Pyrrolidine, polymer with azetidine and oxirane, block (9CI) (CA INDEX NAME)

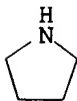
CM 1

CRN 503-29-7
CMF C3 H7 N



CM 2

CRN 123-75-1
CMF C4 H9 N



CM 3

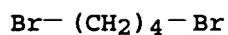
CRN 75-21-8
CMF C2 H4 O



RN 220571-04-0 HCAPLUS
CN 1,3-Propanediamine, N-(3-aminopropyl)-, polymer with 1,4-dibromobutane (9CI) (CA INDEX NAME)

CM 1

CRN 110-52-1
CMF C4 H8 Br2



CM 2

CRN 56-18-8

CMF C6 H17 N3



RN 220571-17-5 HCAPLUS

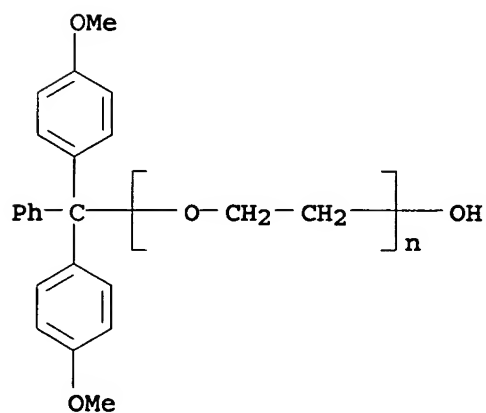
CN Aziridine, polymer with α -[bis(4-methoxyphenyl)phenylmethyl]-
 ω -hydroxypoly(oxy-1,2-ethanediyl), graft (9CI) (CA INDEX
 NAME)

CM 1

CRN 151835-83-5

CMF (C2 H4 O)_n C21 H20 O3

CCI PMS



CM 2

CRN 151-56-4

CMF C2 H5 N



IC ICM C12N

CC 15-2 (Immunochemistry)
Section cross-reference(s): 3, 63

IT 220571-05-1P
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(polycationic; vaccine compns. containing antigen-encoding polynucleotide and block copolymer for inducing activation of dendritic cells and for treating cancer or infection)

IT 71-44-3, N,N'-Bis(3-aminopropyl)-1,4-butanediamine 102-52-3, Malonaldehyde bis(dimethyl acetal) 123-91-1, 1,4-Dioxane, reactions 505-22-6, 1,3-Dioxane
RL: RCT (Reactant); RACT (Reactant or reagent)
(vaccine compns. containing antigen-encoding polynucleotide and block copolymer for inducing activation of dendritic cells and for treating cancer or infection)

IT 542-78-9P, Malonaldehyde
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(vaccine compns. containing antigen-encoding polynucleotide and block copolymer for inducing activation of dendritic cells and for treating cancer or infection)

IT 25322-68-3P 69507-49-9P 106392-12-5P, Polyoxyethylene-polyoxypropylene block copolymer
111265-31-7P 159405-62-6P 160113-14-4P 172884-67-2P
179184-75-9P 179241-17-9DP, block copolymer conjugates
179241-18-0DP, block copolymer conjugates 220570-95-6P
220571-02-8P 220571-04-0P 220571-14-2P
220571-17-5P 288306-26-3P 288306-29-6P 288306-32-1P
372215-59-3DP, block copolymer conjugates 373388-65-9P
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(vaccine compns. containing antigen-encoding polynucleotide and block copolymer for inducing activation of dendritic cells and for treating cancer or infection)

L224 ANSWER 13 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2001:297648 HCAPLUS
DOCUMENT NUMBER: 134:321552
TITLE: Polynucleotide-polymer complexes for cell transfection
INVENTOR(S): Kabanov, Alexander V.; Alakov, Valery Y.; Vinogradov, Sergey V.
PATENT ASSIGNEE(S): Supratek Pharma, Inc., Can.
SOURCE: U.S., 25 pp., Cont.-in-part of U.S. Ser. No. 912,968.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 6
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6221959	B1	20010424	US 1998-124943	1998

US 5656611	A	19970812	US 1994-342209	0730
				1994
				1118
US 6353055	B1	20020305	US 1997-912968	1997
				0801
CA 2298061	AA	19990211	CA 1998-2298061	1998
				0731
JP 2003526692	T2	20030909	JP 2000-504868	1998
				0731
US 6359054	B1	20020319	US 1999-227364	1999
				0108
US 6440743	B1	20020827	US 1999-320640	1999
				0526
US 2003198678	A1	20031023	US 2002-164875	2002
				0607
PRIORITY APPLN. INFO.:			US 1994-342209	A2
				1994
				1118
			US 1997-912968	A2
				1997
				0801
			US 1998-124943	A
				1998
				0730
			WO 1998-US16012	W
				1998
				0731
			US 1999-320640	A3
				1999
				0526

AB Compns. for stabilizing polynucleic acids and increasing the ability of polynucleic acids to cross cell membranes and act in the interior of a cell are disclosed. In one aspect, the invention provides a polynucleotide complex between a polynucleotide and certain polyether block copolymers. The polynucleotide complex can further include a polycationic polymer, as well as suitable targeting mols. and surfactants. The invention also provides a polynucleotide complex between a polynucleotide and a block copolymer comprising a polyether block and a polycation block. Thus, complexes of polymers of the invention and DNA were found to be resistant to nuclease digestion and to have an improved plasma half-life. These complexes improved transfection efficiency in a variety of cells, e.g., CHO, 3T3, MDCK, and Bacillus subtilis. An antisense oligonucleotide

targeting MDR1 mRNA was introduced into SKVLB cells by this method. This procedure successfully reversed the cell's resistance to daunomycin.

IT 179184-80-6D, 1,4-Dibromobutane-N-(3-aminopropyl)-1,3-propanediamine-polyethylene glycol block copolymer, DNA complexes 847448-61-7D, DNA complexes
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(di- and triblock; polynucleotide-polymer complexes for cell transfection)
RN 179184-80-6 HCAPLUS
CN 1,3-Propanediamine, N-(3-aminopropyl)-, polymer with 1,4-dibromobutane and oxirane, block (9CI) (CA INDEX NAME)
CM 1
CRN 110-52-1
CMF C4 H8 Br2

Br-(CH₂)₄-Br

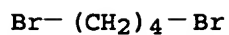
CM 2
CRN 75-21-8
CMF C2 H4 O



CM 3
CRN 56-18-8
CMF C6 H17 N3

H₂N-(CH₂)₃-NH-(CH₂)₃-NH₂

RN 847448-61-7 HCAPLUS
CN 1,3-Propanediamine, N-(3-aminopropyl)-, polymer with 1,4-dibromobutane and oxirane, triblock (9CI) (CA INDEX NAME)
CM 1
CRN 110-52-1
CMF C4 H8 Br2



CM 2

CRN 75-21-8

CMF C2 H4 O



CM 3

CRN 56-18-8

CMF C6 H17 N3

IT 160796-34-9P, Aziridine-ethylene oxide block copolymer
708211-98-7PRL: SPN (Synthetic preparation); PREP (Preparation)
(diblock; polynucleotide-polymer complexes for cell
transfection)

RN 160796-34-9 HCAPLUS

CN Aziridine, polymer with oxirane, block (9CI) (CA INDEX NAME)

CM 1

CRN 151-56-4

CMF C2 H5 N



CM 2

CRN 75-21-8

CMF C2 H4 O



RN 708211-98-7 HCAPLUS

CN Aziridine, polymer with oxirane, diblock (9CI) (CA INDEX NAME)

CM 1

CRN 151-56-4

CMF C2 H5 N



CM 2

CRN 75-21-8

CMF C2 H4 O



IT 823789-25-9D, DNA complexes

RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(polynucleotide-polymer complexes for cell transfection)

RN 823789-25-9 HCAPLUS

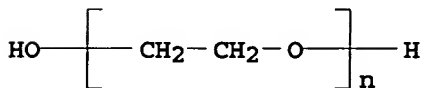
CN 1,3-Propanediamine, N-(3-aminopropyl)-, polymer with 1,4-dibromobutane and α -hydro- ω -hydroxypoly(oxy-1,2-ethanediyl), diblock (9CI) (CA INDEX NAME)

CM 1

CRN 25322-68-3

CMF (C2 H4 O)_n H2 O

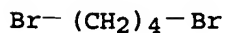
CCI PMS



CM 2

CRN 110-52-1

CMF C4 H8 Br2



CM 3

CRN 56-18-8

CMF C6 H17 N3



IT 9002-98-6DP, Poly(ethylenimine), salts with
carboxy-terminated vinyl polymers 108166-37-6P,
Aziridine-vinyl alcohol graft copolymer 111265-31-7P,
Aziridine-ethylene oxide-propylene oxide block graft copolymer
116770-99-1P, Aziridine-ethylene oxide graft copolymer
220571-04-0P, N-(3-Aminopropyl)-1,3-propanediamine-1,4-
dibromobutane copolymer 335595-66-9DP,
N,N'-Bis(3-aminopropyl)-1,3-propanediamine-malonaldehyde
copolymer, borohydride reduction products
RL: SPN (Synthetic preparation); PREP (Preparation)
(polynucleotide-polymer complexes for cell transfection)

RN 9002-98-6 HCAPLUS
CN Aziridine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 151-56-4

CMF C2 H5 N

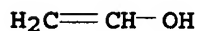


RN 108166-37-6 HCAPLUS
CN Ethenol, polymer with aziridine, graft (9CI) (CA INDEX NAME)

CM 1

CRN 557-75-5

CMF C2 H4 O



CM 2

CRN 151-56-4

CMF C2 H5 N



RN 111265-31-7 HCAPLUS
CN Aziridine, polymer with methyloxirane and oxirane, block, graft
(9CI) (CA INDEX NAME)

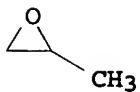
CM 1

CRN 151-56-4
CMF C2 H5 N



CM 2

CRN 75-56-9
CMF C3 H6 O



CM 3

CRN 75-21-8
CMF C2 H4 O



RN 116770-99-1 HCAPLUS
CN Aziridine, polymer with oxirane, graft (9CI) (CA INDEX NAME)

CM 1

CRN 151-56-4
CMF C2 H5 N



CM 2

CRN 75-21-8

CMF C2 H4 O



RN 220571-04-0 HCAPLUS

CN 1,3-Propanediamine, N-(3-aminopropyl)-, polymer with
1,4-dibromobutane (9CI) (CA INDEX NAME)

CM 1

CRN 110-52-1

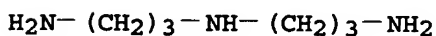
CMF C4 H8 Br2



CM 2

CRN 56-18-8

CMF C6 H17 N3



RN 335595-66-9 HCAPLUS

CN Propanedial, polymer with N-(3-aminopropyl)-1,3-propanediamine
(9CI) (CA INDEX NAME)

CM 1

CRN 542-78-9

CMF C3 H4 O2



CM 2

CRN 56-18-8
CMF C6 H17 N3



- IC C08G063-48
INCL 525054200
CC 3-1 (Biochemical Genetics)
Section cross-reference(s): 35
- IT 179184-80-6D, 1,4-Dibromobutane-N-(3-aminopropyl)-1,3-propanediamine-polyethylene glycol block copolymer, DNA complexes 847448-61-7D, DNA complexes
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(di- and triblock; polynucleotide-polymer complexes for cell transfection)
- IT 159405-62-6DP, L-Lysine-polyethylene glycol block copolymer, DNA complexes 745048-27-5DP, DNA complexes
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); PROC (Process)
(diblock; polynucleotide-polymer complexes for cell transfection)
- IT 179184-74-8D, L-Alanine-L-lysine-polyethylene glycol block copolymer, DNA complexes 288306-26-3D, Ethylene oxide-N-ethyl-4-vinylpyridinium bromide block copolymer, DNA complexes 735271-91-7D, DNA complexes 742087-13-4D, DNA complexes
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(diblock; polynucleotide-polymer complexes for cell transfection)
- IT 160796-34-9P, Aziridine-ethylene oxide block copolymer 708211-98-7P
RL: SPN (Synthetic preparation); PREP (Preparation)
(diblock; polynucleotide-polymer complexes for cell transfection)
- IT 823789-25-9D, DNA complexes
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(polynucleotide-polymer complexes for cell transfection)
- IT 9002-98-6DP, Poly(ethylenimine), salts with carboxy-terminated vinyl polymers 9003-05-8DP, Polyacrylamide, carboxy-terminated, salts with poly(ethylenimine) 9003-39-8DP, Poly(vinylpyrrolidinone), carboxy-terminated, salts with poly(ethylenimine) 28902-82-1DP, Poly(N-acryloylmorpholine), carboxy-terminated, salts with poly(ethylenimine) 108166-37-6P, Aziridine-vinyl alcohol graft copolymer 111265-31-7P, Aziridine-ethylene oxide-propylene oxide block graft copolymer 116770-99-1P, Aziridine-ethylene oxide graft copolymer 143073-46-5P, Ethylene oxide-L-lysine

graft copolymer 151835-83-5P 220571-04-0P,
 N-(3-Aminopropyl)-1,3-propanediamine-1,4-dibromobutane copolymer
 288306-29-6P 335595-66-9DP, N,N'-Bis(3-aminopropyl)-1,3-
 propanediamine-malonaldehyde copolymer, borohydride
 reduction products

RL: SPN (Synthetic preparation); PREP (Preparation)
 (polynucleotide-polymer complexes for cell transfection)

REFERENCE COUNT: 136 THERE ARE 136 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L224 ANSWER 14 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:12793 HCAPLUS

DOCUMENT NUMBER: 134:74037

TITLE: Improved lithium ion polymer
 electrolytes and methods of
 manufacturing an electrochemical cell

INVENTOR(S): Munshi, M. Zafar A.

PATENT ASSIGNEE(S): Lithium Power Technologies, Inc., USA

SOURCE: PCT Int. Appl., 43 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001001507	A1	20010104	WO 2000-US16294	2000 0626

W: AU, BR, CA, CN, ID, IL, IN, JP, KR, MX, SG, VN

RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU,
 MC, NL, PT, SE

US 6413676	B1	20020702	US 1999-340944	1999 0628
JP 2003503822	T2	20030128	JP 2001-506631	2000 0626

US 2003091904	A1	20030515	US 2002-187483	2002 0702
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US 6828065	B2	20041207		
US 2004151985	A1	20040805	US 2002-188339	2002 0702

PRIORITY APPLN. INFO.: US 1999-340944 A 1999
 0628

WO 2000-US16294 W 2000
 0626

AB A dimensionally stable, highly resilient, hybrid copolymer solid-solution electrolyte-retention film for use in a lithium ion battery in one preferred embodiment has a predominantly amorphous structure and mech. strength despite contact with liquid solvent electrolyte. The film is a thinned (stretched), cast film of a homogeneous blend of two or more polymers, one of which is selected for its pronounced solvent retention properties. A very high surface area inorg. filler dispersed in the blend during formation thereof serves to increase the porosity of the film and thereby enhance electrolyte retention. The film is soaked in a solution of liquid polymer with liquid organic solvent electrolyte and lithium salt, for absorption thereof. Use of a crosslinked liquid polymer enhances trapping of mols. of the electrolyte into pores of the film. The electrolyte film is sandwiched between flexible active anode and cathode layers to form the lithium ion battery. Novel methods are provided for forming the electrodes, the polymer substrate, and other elements of the battery.

IT 25233-30-1, Polyaniline

RL: DEV (Device component use); USES (Uses)

(Li-doped; improved lithium ion polymer

electrolytes and methods of manufacturing electrochem. cell)

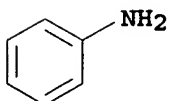
RN 25233-30-1 HCAPLUS

CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3

CMF C6 H7 N



IT 7440-02-0, Nickel, uses 7440-50-8, Copper, uses

RL: DEV (Device component use); USES (Uses)

(current collector; improved lithium ion

polymer electrolytes and methods of manufacturing electrochem. cell)

RN 7440-02-0 HCAPLUS

CN Nickel (8CI, 9CI) (CA INDEX NAME)

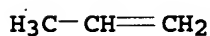
Ni

RN 7440-50-8 HCAPLUS

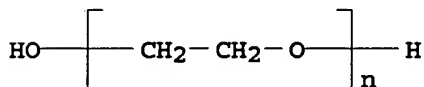
CN Copper (7CI, 8CI, 9CI) (CA INDEX NAME)

Cu

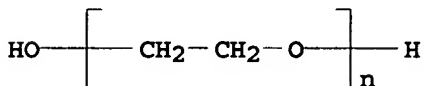
IT 9003-07-0, Polypropylene 25322-68-3,
 Peo 25322-68-3D, Peo, oxymethylene-linked
 RL: DEV (Device component use); USES (Uses)
 (improved lithium ion polymer
 electrolytes and methods of manufacturing electrochem. cell)
 RN 9003-07-0 HCAPLUS
 CN 1-Propene, homopolymer (9CI) (CA INDEX NAME)
 CM 1
 CRN 115-07-1
 CMF C3 H6



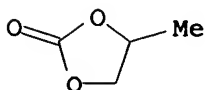
RN 25322-68-3 HCAPLUS
 CN Poly(oxy-1,2-ethanediyl), α -hydro- ω -hydroxy- (9CI)
 (CA INDEX NAME)



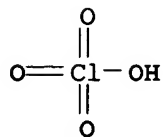
RN 25322-68-3 HCAPLUS
 CN Poly(oxy-1,2-ethanediyl), α -hydro- ω -hydroxy- (9CI)
 (CA INDEX NAME)



IT 108-32-7, Propylene carbonate
 7791-03-9, Lithium perchlorate 14283-07-9,
 Lithium tetrafluoroborate 21324-40-3, Lithium
 hexafluorophosphate 29935-35-1, Lithium
 hexafluoroarsenate 33454-82-9, Lithium triflate
 90076-65-6, Lithium bis(trifluoromethanesulfonyl)imide
 RL: DEV (Device component use); TEM (Technical or engineered
 material use); USES (Uses)
 (improved lithium ion polymer
 electrolytes and methods of manufacturing electrochem. cell)
 RN 108-32-7 HCAPLUS
 CN 1,3-Dioxolan-2-one, 4-methyl- (9CI) (CA INDEX NAME)

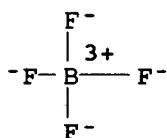


RN 7791-03-9 HCAPLUS
 CN Perchloric acid, lithium salt (8CI, 9CI) (CA INDEX NAME)



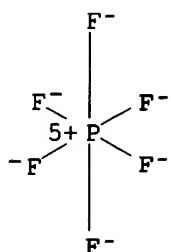
● Li

RN 14283-07-9 HCAPLUS
 CN Borate(1-), tetrafluoro-, lithium (8CI, 9CI) (CA INDEX NAME)



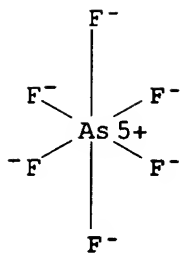
● Li⁺

RN 21324-40-3 HCAPLUS
 CN Phosphate(1-), hexafluoro-, lithium (8CI, 9CI) (CA INDEX NAME)

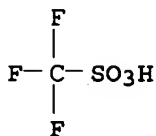


● Li⁺

RN 29935-35-1 HCAPLUS
 CN Arsenate(1-), hexafluoro-, lithium (8CI, 9CI) (CA INDEX NAME)

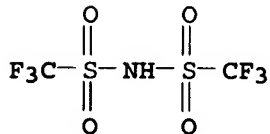
● Li⁺

RN 33454-82-9 HCAPLUS
 CN Methanesulfonic acid, trifluoro-, lithium salt (8CI, 9CI) (CA INDEX NAME)



● Li

RN 90076-65-6 HCAPLUS
 CN Methanesulfonamide, 1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl]-, lithium salt (9CI) (CA INDEX NAME)



● Li

IC ICM H01M006-18
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 Section cross-reference(s): 38
 ST battery lithium ion polymer electrolyte
 IT Conducting polymers
 (Li-doped; improved lithium ion polymer electrolytes and methods of manufacturing electrochem. cell)

- IT Polyacetylenes, uses
Polyanilines
RL: DEV (Device component use); USES (Uses)
(Li-doped; improved lithium ion polymer
electrolytes and methods of manufacturing electrochem. cell)
- IT Battery electrolytes
Electron beams
Polymer electrolytes
UV radiation
(improved lithium ion polymer
electrolytes and methods of manufacturing electrochem. cell)
- IT Acrylic polymers, uses
Fluoropolymers, uses
Polycarbonates, uses
Polyesters, uses
Polyoxyalkylenes, uses
Polysiloxanes, uses
Polythiophenylenes
RL: DEV (Device component use); USES (Uses)
(improved lithium ion polymer
electrolytes and methods of manufacturing electrochem. cell)
- IT Secondary batteries
(lithium; improved lithium ion polymer
electrolytes and methods of manufacturing electrochem. cell)
- IT Polyoxyalkylenes, uses
RL: DEV (Device component use); USES (Uses)
(oxymethylene-linked; improved lithium ion
polymer electrolytes and methods of manufacturing
electrochem. cell)
- IT Urethanes
RL: TEM (Technical or engineered material use); USES (Uses)
(trifunctional, crosslinking agent; improved lithium
ion polymer electrolytes and
methods of manufacturing electrochem. cell)
- IT 25067-58-7, Polyacetylene 25233-30-1, Polyaniline
30604-81-0, Polypyrrole
RL: DEV (Device component use); USES (Uses)
(Li-doped; improved lithium ion polymer
electrolytes and methods of manufacturing electrochem. cell)
- IT 7631-86-9, Fumed silica, uses
RL: DEV (Device component use); MOA (Modifier or additive use);
USES (Uses)
(colloidal, filler; improved lithium ion
polymer electrolytes and methods of manufacturing
electrochem. cell)
- IT 7429-90-5, Aluminum, uses 7440-02-0, Nickel, uses
7440-50-8, Copper, uses 7440-66-6, Zinc, uses
12597-68-1, Stainless steel, uses
RL: DEV (Device component use); USES (Uses)
(current collector; improved lithium ion
polymer electrolytes and methods of manufacturing
electrochem. cell)
- IT 1344-28-1, Alumina, uses
RL: DEV (Device component use); MOA (Modifier or additive use);
USES (Uses)
(filler; improved lithium ion polymer

electrolytes and methods of manufacturing electrochem. cell)
 IT 1332-29-2, Tin oxide 7440-44-0D, Carbon, intercalation compds.,
 uses 9002-84-0, Ptfе 9003-07-0, Polypropylene
 9003-11-6, Ethylene oxide-propylene oxide copolymer 9011-14-7,
 Pmma 11126-15-1, Lithium vanadium oxide 12057-17-9, Lithium
 manganese oxide LiMn2O4 12423-04-0, Lithium vanadium oxide-
 LiV3O8 24937-79-9, Pvdф 24968-11-4, Polyethylene
 naphthalate 25014-41-9, Polyacrylonitrile 25038-59-9,
 Polyethylene terephthalate, uses 25067-61-2,
 Polymethacrylonitrile 25230-87-9 25322-68-3, Peo
 25322-68-3D, Peo, oxymethylene-linked 30871-57-9,
 Propylene-vinylidene fluoride copolymer 39300-70-4, Lithium
 nickel oxide 39457-42-6, Lithium manganese oxide 52627-24-4,
 Cobalt lithium oxide 61673-65-2, Lithium niobium selenide
 74245-06-0, Lithium vanadium sulfide 98973-15-0 131344-56-4,
 Cobalt lithium nickel oxide 136511-06-3, Meep 162684-16-4,
 Lithium manganese nickel oxide 214536-41-1, Cobalt lithium
 manganese oxide

RL: DEV (Device component use); USES (Uses)

(improved lithium ion polymer

electrolytes and methods of manufacturing electrochem. cell)
 IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate
 108-32-7, Propylene carbonate
 616-38-6, Dimethyl carbonate 7791-03-9, Lithium
 perchlorate 14024-11-4, Lithium tetrachloroaluminate
 14283-07-9, Lithium tetrafluoroborate 21324-40-3
 , Lithium hexafluorophosphate 29935-35-1, Lithium
 hexafluoroarsenate 33454-82-9, Lithium triflate
 90076-65-6, Lithium bis(trifluoromethanesulfonyl)imide
 132404-42-3

RL: DEV (Device component use); TEM (Technical or engineered
 material use); USES (Uses)

(improved lithium ion polymer

electrolytes and methods of manufacturing electrochem. cell)

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L224 ANSWER 15 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN.

ACCESSION NUMBER: 2000:902574 HCAPLUS

DOCUMENT NUMBER: 135:33825

TITLE: Solvation and solvent relaxation in

swellable copolymers as studied by
 time-resolved fluorescence spectroscopy

AUTHOR(S): Egelhaaf, H. -J.; Lehr, B.; Hof, M.; Hafner,
 A.; Fritz, H.; Schneider, F. W.; Bayer, E.;
 Oelkrug, D.

CORPORATE SOURCE: Institute for Physical Chemistry, University
 of Tübingen, Tübingen, 72076, Germany

SOURCE: Journal of Fluorescence (2000), 10(4), 383-392
 CODEN: JOFLEN; ISSN: 1053-0509

PUBLISHER: Kluwer Academic/Plenum Publishers

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The fluorescent probe dimethylaminonaphthylsulfonamide is
 covalently bound to the ends of the pol(ethylene glycol) chains of

the swellable block copolymers poly(ethylene glycol)-polystyrene (PEG-PS) and poly(ethylene glycol)-poly(ethylene imine) (PEG-PEI) to investigate the mol. mobility inside the polymers, swollen by different liqs. Steady-state and time-resolved studies of the Stokes shift between absorption and fluorescence spectra reveal that the probe is solvated by both the polymer matrix and the liquid phase. The extent of solvation by the liquid and the mobility of the microenvironment of the probe depend on both the swelling volume of the polymer and the solubility of the probe in this liquid. Steady-state and time-resolved fluorescence depolarization measurements show that the polymer matrix forms a very rigid solvent cage, which almost completely immobilizes the probe. Upon solvation of the probe by the liquid, the mobility of the probe increases. In PEG-PEI swollen by polar solvents, the mobilities of the probe itself and of its microenvironment, although not reaching the values observed in homogeneous solution, are significantly higher than in PEG-PS, due to the hydrophilic nature of the polymeric backbone in PEG-PEI.

IT 160796-34-9, Ethylene oxide-ethylenimine block copolymer
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
 (solvation and solvent relaxation in swellable polyoxyethylene copolymers by time-resolved fluorescence spectroscopy)

RN 160796-34-9 HCAPLUS

CN Aziridine, polymer with oxirane, block (9CI) (CA INDEX NAME)

CM 1

CRN 151-56-4

CMF C2 H5 N



CM 2

CRN 75-21-8

CMF C2 H4 O



CC 36-7 (Physical Properties of Synthetic High Polymers)
 ST solvation solvent relaxation swellable block polyoxyethylene fluorescence spectroscopy; polystyrene block polyoxyethylene swellable solvation solvent relaxation; polyethylenimine block polyoxyethylene swellable solvation solvent relaxation

IT Molecular dynamics
(relaxation, solvent; solvation and solvent
relaxation in **swellable** polyoxyethylene copolymers by
time-resolved fluorescence spectroscopy)

IT Fluorescence
Solvation
(solvation and solvent relaxation in
swellable polyoxyethylene copolymers by time-resolved
fluorescence spectroscopy)

IT 107311-90-0, Ethylene oxide-styrene block copolymer
160796-34-9, Ethylene oxide-ethylenimine block copolymer
RL: PEP (Physical, engineering or chemical process); PRP
(Properties); PROC (Process)
(solvation and solvent relaxation in
swellable polyoxyethylene copolymers by time-resolved
fluorescence spectroscopy)

REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L224 ANSWER 16 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1999:549331 HCAPLUS
DOCUMENT NUMBER: 131:186350
TITLE: Ink development for the preparation of
pigmented hot-melt solid inks
INVENTOR(S): Tregub, Inna; Fathollahi, Zahra
PATENT ASSIGNEE(S): Data Products Corporation, USA
SOURCE: PCT Int. Appl., 37 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9942532	A1	19990826	WO 1999-US3582	1999 0218
W:	AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
US 6099631	A	20000808	US 1998-25875	1998 0219
CA 2320995	AA	19990826	CA 1999-2320995	1999 0218
AU 9933020	A1	19990906	AU 1999-33020	

CRN 151-56-4
CMF C2 H5 N



RN 199297-67-1 HCAPLUS
 CN Octadecanoic acid, 12-hydroxy-, polymer with aziridine, graft
 (9CI) (CA INDEX NAME)

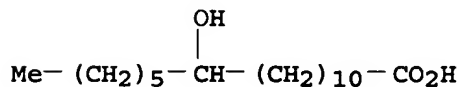
CM 1

CRN 151-56-4
 CMF C2 H5 N



CM 2

CRN 106-14-9
 CMF C18 H36 O3

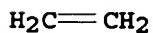


IT 9002-88-4, Polyethylene
 RL: TEM (Technical or engineered material use); USES (Uses)
 (wax; in mill base preparation for reduced processing of pigmented
 hot-melt solid inks)

RN 9002-88-4 HCAPLUS
 CN Ethene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 74-85-1
 CMF C2 H4



IC ICM C09D011-00
 ICS C09D017-00; C09B067-00
 CC 42-12 (Coatings, Inks, and Related Products)
 ST color pigment mill base jet ink; milling time redn jet ink; hot
 melt pigmented ink; plasticizer solvent
 pigment mill base ink
 IT 115-86-6, Triphenyl phosphate 130-20-1, C.I. Pigment Blue 64

147-14-8, C.I. Pigment Blue 15 555-43-1 574-93-6, C.I. Pigment Blue 16 614-33-5, Glyceryl tribenzoate 627-83-8, Glycolube 674 980-26-7, C.I. Pigment Red 122 1324-27-2, C.I. Pigment Blue 22 1345-09-1, C.I. Pigment Red 113 1345-16-0, C.I. Pigment Blue 28 2425-85-6, C.I. Pigment Red 3 2814-77-9, C.I. Pigment Red 4 3061-75-4, Kemamide B 3089-17-6, C.I. Pigment Red 202 3564-21-4, C.I. Pigment Red 48 4378-61-4, C.I. Pigment Red 168 6407-81-4, C.I. Pigment Yellow 7 6486-26-6, C.I. Pigment Yellow 2 6985-92-8, C.I. Pigment Red 175 7782-42-5, Graphite, uses 8007-18-9, C.I. Pigment Yellow 53 12224-98-5, C.I. Pigment Red 81 13463-67-7, Titania, uses 15993-42-7, C.I. Pigment Yellow 111 31837-42-0, C.I. Pigment Yellow 151 35541-81-2, 1,4-Cyclohexanedimethanol dibenzoate 35636-63-6, C.I. Pigment Yellow 175 68516-73-4 70969-57-2, Glycolube P 82199-12-0, C.I. Pigment Yellow 194 86753-77-7, Solsperser 3000 86753-78-8, Solsperser 5000 86753-81-3, Solsperser 17000 86753-82-4, Solsperser 22000 109265-72-7, Solsperser 20000 119510-12-2, Solsperser 24000 125936-62-1, Solsperser 13240 129406-28-6, C.I. Pigment Blue 68 151638-61-8, Solsperser 13940 155421-17-3, C.I. Pigment Red 217 199297-67-1, Solsperser 28000 239795-92-7, C.I. Pigment Red 97

RL: TEM (Technical or engineered material use); USES (Uses)
(in mill base preparation for reduced processing of pigmented hot-melt solid inks)

IT 9002-88-4, Polyethylene

RL: TEM (Technical or engineered material use); USES (Uses)
(wax; in mill base preparation for reduced processing of pigmented hot-melt solid inks)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L224 ANSWER 17 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1997:293830 HCAPLUS
DOCUMENT NUMBER: 126:265002
TITLE: Optically clear antistatic pressure-sensitive easily removable adhesive film
INVENTOR(S): Kellen, James N.; Gutman, Gustav; Goetz, Richard J.
PATENT ASSIGNEE(S): Minnesota Mining and Manufacturing Co., USA
SOURCE: PCT Int. Appl., 25 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9708260	A1	19970306	WO 1996-US7669	1996 0711

W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE,
DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ,
LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ,

PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA,
 UG, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
 RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR,
 GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI,
 CM, GA, GN, ML

AU 9665404

A1

19970319

AU 1996-65404

1996
0711

PRIORITY APPLN. INFO.:

US 1995-2619P

P

1995
0822

US 1996-661505

A

1996
0611

WO 1996-US7669

W

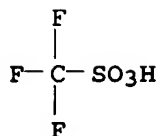
1996
0711

AB The film useful for temporary protection of electronic equipments during assembly comprises a transparent flexible polymeric film support bearing on at least one major surface thereof a non-tribocharging, microparticulate blend adhesive formed from a blend of (A) conductive, polymeric, inherently tacky, solvent-insol., solvent-dispersible, elastomeric microparticles, the microparticles having a surface bearing thereon an ionic conductive material formed from a polymer electrolyte base polymer, and at least one ionic salt selected from the group consisting of salts of alkali metals and salts of alkaline earth metals, wherein the microparticles have an average diameter of ≥ 1 μ m, and (B) a nonparticulate acrylic copolymer; the adhesive having an adhesion to steel of 0.1-5 N/100 mm, and an optical transmission value of $\geq 80\%$. An adhesive film was derived from a composition containing isooctyl acrylate-acrylic acid-polyoxyethylene methacrylate copolymer (40% in water) 100, Rhoplex AC 630 (acrylic emulsion, 50% in water) 20, Li nitrate (20% in water) 3.0, and UCAR Polyphobe 104 (thickener, 25% in water) 0.5 g.

IT 33454-82-9, Lithium trifluoromethanesulfonate
 RL: MOA (Modifier or additive use); USES (Uses)
 (optically clear antistatic pressure-sensitive easily removable adhesive film)

RN 33454-82-9 HCAPLUS

CN Methanesulfonic acid, trifluoro-, lithium salt (8CI, 9CI) (CA INDEX NAME)



● Li

IT 9002-98-6 24980-34-5, Polyethylene sulfide 25322-68-3 25322-69-4, Polypropylene oxide 26913-06-4, Poly[imino(1,2-ethanediyl)]
 RL: TEM (Technical or engineered material use); USES (Uses) (polymer electrolyte base; optically clear antistatic pressure-sensitive easily removable adhesive film)

RN 9002-98-6 HCAPLUS

CN Aziridine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 151-56-4

CMF C2 H5 N



RN 24980-34-5 HCAPLUS

CN Thiirane, homopolymer (9CI) (CA INDEX NAME)

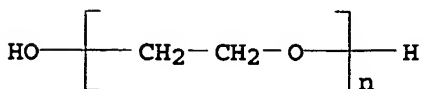
CM 1

CRN 420-12-2

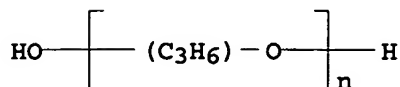
CMF C2 H4 S



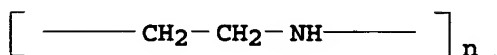
RN 25322-68-3 HCAPLUS

CN Poly(oxy-1,2-ethanediyl), α -hydro- ω -hydroxy- (9CI) (CA INDEX NAME)

RN 25322-69-4 HCAPLUS
 CN Poly[oxy(methyl-1,2-ethanediyl)], α -hydro- ω -hydroxy-
 (9CI) (CA INDEX NAME)



RN 26913-06-4 HCAPLUS
 CN Poly[imino(1,2-ethanediyl)] (9CI) (CA INDEX NAME)



IC ICM C09J007-02
 ICS C09J133-08; H01B001-12
 CC 38-3 (Plastics Fabrication and Uses)
 Section cross-reference(s): 76
 IT 52234-82-9, XAMA 2 57116-45-7, XAMA 7
 RL: MOA (Modifier or additive use); USES (Uses)
 (crosslinker; optically clear antistatic
 pressure-sensitive easily removable adhesive film)
 IT 188818-22-6P, Acrylic acid-polyethylene glycol
 monomethacrylate-isooctyl acrylate copolymer 188818-23-7P,
 Acrylic acid-polyethylene glycol monomethacrylate-
 isooctyl acrylate-ethyl acrylate copolymer 188818-24-8P,
 1,6-Hexanediol diacrylate-polyethylene glycol
 monomethacrylate-isooctyl acrylate-ethyl acrylate copolymer
 RL: IMF (Industrial manufacture); TEM (Technical or engineered
 material use); PREP (Preparation); USES (Uses)
 (optically clear antistatic pressure-sensitive easily removable
 adhesive film)
 IT 540-72-7, Sodium isothiocyanate 1310-58-3, Potassium hydroxide,
 uses 1310-65-2, Lithium hydroxide 1336-21-6, Ammonium
 hydroxide 2794-60-7, Barium trifluoromethanesulfonate
 7447-41-8, Lithium chloride, uses 7681-82-5, Sodium iodide, uses
 7790-69-4, Lithium nitrate 10377-48-7, Lithium sulfate
 33454-82-9, Lithium trifluoromethanesulfonate
 RL: MOA (Modifier or additive use); USES (Uses)
 (optically clear antistatic pressure-sensitive easily removable
 adhesive film)
 IT 9002-98-6 9041-80-9, Polyphenylene oxide 24936-67-2,
 Polyethylene sulfide 24980-34-5,
 Polyethylene sulfide 25190-06-1 25212-74-2,
 Polyphenylene sulfide 25322-68-3 25322-69-4,
 Polypropylene oxide 26913-06-4,
 Poly[imino(1,2-ethanediyl)] 31370-30-6 89014-29-9,
 Polybutyleneimine
 RL: TEM (Technical or engineered material use); USES (Uses)
 (polymer electrolyte base; optically clear antistatic
 pressure-sensitive easily removable adhesive film)

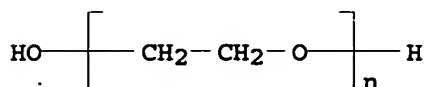
L224 ANSWER 18 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1996:231397 HCAPLUS
 DOCUMENT NUMBER: 124:255235
 TITLE: Electrochemical immunoassay
 INVENTOR(S): Kasparov, Stanislav Victor; Farmakovski,
 Dmitri Alexand
 PATENT ASSIGNEE(S): Leaver, Jonathan, UK
 SOURCE: PCT Int. Appl., 51 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9602001	A1	19960125	WO 1995-GB1602	1995 0707
W: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TT RW: KE, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9529852	A1	19960209	AU 1995-29852	1995 0707
PRIORITY APPLN. INFO.:			RU 1994-21430	A 1994 0707
			WO 1995-GB1602	W 1995 0707

AB An immunoassay method for detecting a biol. analyte forming a binding pair with a bioreceptor uses a 3-electrode cell comprising a reference electrode, an auxiliary electrode, and an indicating electrode. The indicating electrode comprises a base electrode having an elec. conductive ion-exchange polymer coating with bioreceptor incorporated therein. The method comprises determining the potential of the reference electrode with respect to the indicating electrode under conditions of constant current between the indicating and auxiliary electrode when the 3 electrodes are placed in a sample-free measuring solution and when the 3 electrodes are placed in a sample-containing measuring solution. The indicating electrode and auxiliary electrode may be in the form of an integrated electrode assembly. The polymer coating of the indicating electrode is preferably a 2-polymer film coating with the bioreceptor incorporated in the outer film. The reference electrode, such as a Ag/AgCl electrode, is separated from the measuring solution by a membrane permeable to the ions of the measuring solution, but not to macromols. In an example, samples

were tested for the presence of hepatitis B surface antigen by using an indicating electrode with polypyrrole coating and antibody incorporated as the bioreceptor.

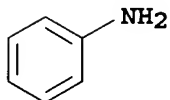
IT 25322-68-3, Peg
 RL: ARU (Analytical role, unclassified); ANST (Analytical study)
 (electrode for electrochem. immunoassay in biochem. anal.)
 RN 25322-68-3 HCAPLUS
 CN Poly(oxy-1,2-ethanediyl), α -hydro- ω -hydroxy- (9CI)
 (CA INDEX NAME)



IT 25233-30-1, Polyaniline
 RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
 (electrode for electrochem. immunoassay in biochem. anal.)
 RN 25233-30-1 HCAPLUS
 CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3
 CMF C6 H7 N



IT 542-78-9, Malonic aldehyde
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (electrode for electrochem. immunoassay in biochem. anal.)
 RN 542-78-9 HCAPLUS
 CN Propanedial (9CI) (CA INDEX NAME)



IC ICM G01N033-543
 ICS G01N027-327
 CC 9-1 (Biochemical Methods)
 Section cross-reference(s): 15, 72
 IT 9003-39-8, Polyvinylpyrrolidone 9042-14-2, Dextran sulfate
 25322-68-3, Peg 25702-74-3, Ficoll
 RL: ARU (Analytical role, unclassified); ANST (Analytical study)
 (electrode for electrochem. immunoassay in biochem. anal.)
 IT 7440-02-0, Nickel, analysis 7440-06-4, Platinum, analysis
 7440-32-6, Titanium, analysis 7440-33-7, Tungsten, analysis
 7440-47-3, Chrome, analysis 7440-48-4, Cobalt, analysis

7440-57-5, Gold, analysis 7558-79-4 7632-05-5, Sodium phosphate 7647-14-5, Sodium chloride, analysis 7757-82-6, Sodium sulfate, analysis 11118-57-3, Chromium oxide 13463-67-7, Titanium oxide, analysis 14066-19-4, Hydrogen phosphate 14265-44-2, Phosphate, analysis 14808-79-8, Sulfate, analysis 25067-54-3, Polyfuran 25233-30-1, Polyaniline 25233-34-5, Polythiophene 25583-20-4, Titanium nitride 30604-81-0, Polypyrrole 59729-33-8

RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)

(electrode for electrochem. immunoassay in biochem. anal.)

IT 111-30-8, Glutaraldehyde 542-78-9, Malonic aldehyde

RL: RCT (Reactant); RACT (Reactant or reagent)

(electrode for electrochem. immunoassay in biochem. anal.)

L224 ANSWER 19 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1995:890436 HCAPLUS

DOCUMENT NUMBER: 123:345697

TITLE: Lithium batteries with improved anodes

INVENTOR(S): Namikata, Takashi; Mori, Yoshihiko

PATENT ASSIGNEE(S): Asahi Chemical Ind, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07201357	A2	19950804	JP 1994-328	1994 0106

PRIORITY APPLN. INFO.:

JP 1994-328

1994
0106

AB The batteries comprise C anodes coated with Li ion-permeable materials having electron conductivity $<10^{-5}$ S/cm at least a part of the surface. The batteries have high charge-discharge efficiency.

IT 7439-93-2, Lithium, uses

RL: DEV (Device component use); USES (Uses)

(carbon anodes coated with Li ion-permeable materials having low elec. conductivity for Li batteries for charge-discharge efficiency)

RN 7439-93-2 HCAPLUS

CN Lithium (7CI, 8CI, 9CI) (CA INDEX NAME)

Li

$$\begin{array}{c} \text{H} \\ \text{N} \\ \diagup \quad \diagdown \\ \text{---} \end{array}$$
$$\text{HO}-\left[\text{CH}_2-\text{CH}_2-\text{O}\right]_n-\text{H}$$
$$\left[\text{---CH}_2\text{---CH}_2\text{---NH---} \right]_n$$

571-272-2538

- IT Carbon fibers, uses
RL: DEV (Device component use); USES (Uses)
(nonwoven fabrics, **anodes**; carbon **anodes**
coated with Li ion-permeable materials having low elec. conductivity
for Li **batteries** for charge-discharge efficiency)
- IT **Anodes**
(**battery**, carbon **anodes** coated with Li
ion-permeable materials having low elec. conductivity for Li
batteries for charge-discharge efficiency)
- IT 7440-44-0, Carbon, uses 7782-42-5, Graphite, uses
RL: DEV (Device component use); USES (Uses)
(**anode**; carbon **anodes** coated with Li
ion-permeable materials having low elec. conductivity for Li
batteries for charge-discharge efficiency)
- IT 7439-93-2, Lithium, uses
RL: DEV (Device component use); USES (Uses)
(carbon **anodes** coated with Li ion-permeable materials
having low elec. conductivity for Li **batteries** for
charge-discharge efficiency)
- IT 50586-48-6, CM 4001
RL: DEV (Device component use); TEM (Technical or engineered
material use); USES (Uses)
(coating, CM 4001; carbon **anodes** coated with Li
ion-permeable materials having low elec. conductivity for Li
batteries for charge-discharge efficiency)
- IT 24938-67-8, Poly[oxy(2,6-dimethyl-1,4-phenylene)] 24980-41-4,
Caprolactone homopolymer 25014-41-9, Polyacrylonitrile
25248-42-4, Caprolactone homopolymer, sru
RL: DEV (Device component use); TEM (Technical or engineered
material use); USES (Uses)
(coating; carbon **anodes** coated with Li ion-permeable
materials having low elec. conductivity for Li **batteries** for
charge-discharge efficiency)
- IT 9002-98-6 9003-53-6, Polystyrene 24936-97-8, Adipic
acid-butylene glycol copolymer, sru 25103-87-1, Adipic
acid-butylene glycol copolymer 25322-68-3
26913-06-4, Poly[imino(1,2-ethanediyl)]
RL: DEV (Device component use); TEM (Technical or engineered
material use); USES (Uses)
(coatings; carbon **anodes** coated with Li ion-permeable
materials having low elec. conductivity for Li **batteries** for
charge-discharge efficiency)

L224 ANSWER 20 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1995:580563 HCAPLUS
DOCUMENT NUMBER: 122:316454
TITLE: Nitrogen-containing polymer solid electrolytes
INVENTOR(S): Yokomichi, Taisuke; Nishino, Hitoshi
PATENT ASSIGNEE(S): Osaka Gas Co Ltd, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

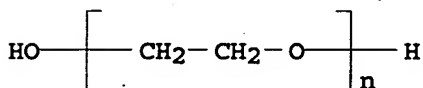
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	
JP 06329793	A2	19941129	JP 1993-118040	1993 0520
PRIORITY APPLN. INFO.:			JP 1993-118040	1993 0520

AB The title electrolytes contain supporting electrolytes and polymer support from a comb polymer of polyethylenimine main chain of d.p. 3 to 1 + 107 and N-bonded polyoxyethylene side chains $XO(CH_2CH_2O)_mR_1$ ($X = OCNR_2NHCO$; $R_2 = \text{arylene, alkylene}$; $R_1 = \text{lower alkyl}$; $m = 3-100$; addition of side chains to main chain N $\geq 5\%$), crosslinked by polyoxyethylene-based crosslinking agent $XO(CH_2CH_2O)_nX$ (X as defined above; $n = 3-200$) with degree of crosslinking 1-95%. 2-Methyl-2-oxazoline was polymerized, hydrolyzed, treated with polyethylene glycol Me ether 1:1 adduct with 2,4-TDI, then polyethylene glycol 1:2 adduct with 2,4-TDI; mixed with $LiClO_4$, and cast to obtain a solid electrolyte with high ion conductivity with low temperature dependence.

IT 25322-68-3DP, Polyethylene glycol, comb polymers with polyethylenimine 26375-28-0DP, 2-Methyl-2-oxazoline polymer, hydrolyzed, comb polymers with polyoxyethylene RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (nitrogen-containing polymer solid electrolytes)

RN 25322-68-3 HCAPLUS

CN Poly(oxy-1,2-ethanediyl), α -hydro- ω -hydroxy- (9CI) (CA INDEX NAME)



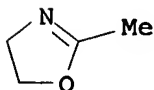
RN 26375-28-0 HCAPLUS

CN Oxazole, 4,5-dihydro-2-methyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 1120-64-5

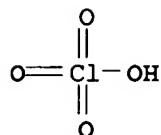
CMF C4 H7 N O



IT 7791-03-9, Lithium perchlorate

RL: TEM (Technical or engineered material use); USES (Uses) (nitrogen-containing polymer solid electrolytes)

RN 7791-03-9 HCAPLUS
 CN Perchloric acid, lithium salt (8CI, 9CI) (CA INDEX NAME)



● Li

IC ICM C08G073-04
 ICS C08G018-40
 CC 38-3 (Plastics Fabrication and Uses)
 IT Crosslinking
 (nitrogen-containing polymer solid electrolytes)
 IT 25322-68-3DP, Polyethylene glycol, comb polymers
 with polyethylenimine 26375-28-0DP, 2-Methyl-2-oxazoline
 polymer, hydrolyzed, comb polymers with polyoxyethylene
 RL: IMF (Industrial manufacture); TEM (Technical or engineered
 material use); PREP (Preparation); USES (Uses)
 (nitrogen-containing polymer solid electrolytes)
 IT 7791-03-9, Lithium perchlorate
 RL: TEM (Technical or engineered material use); USES (Uses)
 (nitrogen-containing polymer solid electrolytes)

L224 ANSWER 21 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1994:9225 HCAPLUS
 DOCUMENT NUMBER: 120:9225
 TITLE: Polyaniline derivatives and their manufacture
 INVENTOR(S): Oka, Osamu
 PATENT ASSIGNEE(S): Tomoegawa Paper Co Ltd, Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 2
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 05194733	A2	19930803	JP 1992-25951	1992 0117
US 5250639	A	19931005	US 1992-909530	1992 0708
PRIORITY APPLN. INFO.:			JP 1991-193565	A 1991 0709

JP 1992-25951

A

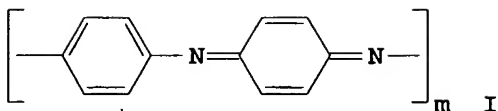
1992
0117

JP 1992-187326

A

1992
0623

GI



AB Organic solvent- or H₂O-soluble or swellable title derivs. composed of quinodimethane units I, (p-C₆H₄NH)_n, and [p-C₆H₄N[CH₂CH(OH)CH₂O(CHR₁CHR₂O)kR₃]]_l [R₁-2 = H, C₁-5 alkyl; R₃ = C₁-30 alkyl, C₂-30 alkenyl, C₁-30 acyl, C₁-30 alkyl-containing phenyl; m, n ≥ 0; l ≥ 1; l + 2m + n = 10-5000; l/(l + 2m + n) = 0.001-1; k = 2-200] are manufactured by treating oxidation-polymerized polyaniline with ammonia to give soluble polyaniline, treating the soluble polyaniline with excess hydrazine to give H-(p-C₆H₄NH)_pH [II; p ≥ 10; number-average mol. weight (M_n) 1000-500,000], and treating II with R₃(OCHR₂CHR₁)kOG (G = glycidyl). Thus, treating aniline in an aqueous HCl solution in the presence of ammonium persulfate gave a polyaniline, which was washed with H₂O and with aqueous ammonia to give soluble polyaniline, then it was dispersed in H₂O and treated with hydrazine to give reduced polyaniline (M_n 12,000). Then, 1 g the reduced polyaniline was dissolved in N-methyl-2-pyrrolidone and treated with 4.29 g polyethylene glycol Me glycidyl ether at 80° for 2 h to give a product with l/(l + 2m + n) = 0.19, n/m 1.99, and l + 2m + n = 103.

IT 25233-30-1DP, Polyaniline, reduced, reaction products with polyethylene glycol glycidyl ethers

RL: PREP (Preparation)

(preparation of, solvent-soluble or swellable)

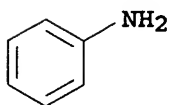
RN 25233-30-1 HCAPLUS

CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3

CMF C6 H7 N



IC ICM C08G073-00
 CC 35-8 (Chemistry of Synthetic High Polymers)
 IT 25233-30-1DP, Polyaniline, reduced, reaction products with
 polyethylene glycol glycidyl ethers 40349-67-5DP,
 Polyethylene glycol methyl glycidyl ether, reaction
 products with reduced polyaniline 86630-59-3DP, reaction
 products with reduced polyaniline 96161-28-3DP, reaction
 products with reduced polyaniline 151758-68-8DP, reaction
 products with reduced polyaniline 151758-69-9DP, reaction
 RL: PREP (Preparation)
 (preparation of, solvent-soluble or swellable)

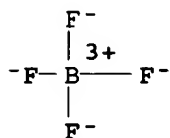
L224 ANSWER 22 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1993:172578 HCAPLUS
 DOCUMENT NUMBER: 118:172578
 TITLE: Electrode composition and its preparation
 INVENTOR(S): Takeyama, Kenichi; Tonomura, Tadashi
 PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd.,
 Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 04277468	A2	19921002	JP 1991-37258	1991 0304
PRIORITY APPLN. INFO.:			JP 1991-37258	1991 0304

AB The composition contain an ion-conductive polymer in an electropolymd.
 polymer. Preferably, the ion-conductive polymer is
 poly(ethylene oxide), poly(
 propylene oxide), polyethyleneimine,
 poly(epichlorohydrin), or polyphosphazane. The composition is
 prepared by electropolymn., where a neg. voltage is applied
 intermittently to the polymer membrane to intercalating cations
 into the membrane. Electrodes prepared from these compns. have low
 polarization and are useful for batteries, capacitances,
 anodes for Li batteries, etc. Polypyrrole
 electrodes containing LiBF4-PEO electrolyte were prepared
 IT 7439-93-2, Lithium, uses
 RL: USES (Uses)
 (anodes, electropolymd. polypyrrole containing
 ion-conductive polymers for, in batteries)
 RN 7439-93-2 HCAPLUS
 CN Lithium (7CI, 8CI, 9CI) (CA INDEX NAME)

Li

IT 14283-07-9, Lithium tetrafluoroborate (LiBF₄)
 RL: USES (Uses)
 (electrode materials from electropolymd. polymers containing
 ion-conductive polymers containing, manufacture of)
 RN 14283-07-9 HCAPLUS
 CN Borate(1-), tetrafluoro-, lithium (8CI, 9CI) (CA INDEX NAME)

● Li⁺

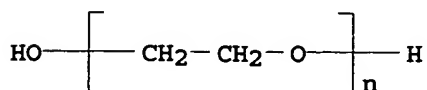
IT 9002-98-6D, Poly(ethylenimine), lithium complexes
 RL: USES (Uses)
 (electrode materials from electropolymd. polymers containing,
 manufacture of)
 RN 9002-98-6 HCAPLUS
 CN Aziridine, homopolymer (9CI) (CA INDEX NAME)

CM 1

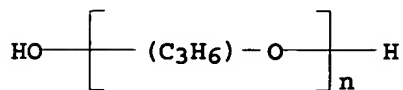
CRN 151-56-4
 CMF C2 H5 N



IT 25322-68-3D, Poly(ethylene
 oxide), lithium complexes 25322-69-4D,
 Poly(propylene oxide), lithium
 complexes
 RL: USES (Uses)
 (electrodes from electropolymd. polypyrrole containing, manufacture of)
 RN 25322-68-3 HCAPLUS
 CN Poly(oxy-1,2-ethanediyl), α-hydro-ω-hydroxy- (9CI)
 (CA INDEX NAME)



RN 25322-69-4 HCAPLUS
 CN Poly[oxy(methyl-1,2-ethanediyl)], α -hydro- ω -hydroxy-
 (9CI) (CA INDEX NAME)



IC ICM H01M004-60
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 Section cross-reference(s): 37, 38, 72, 76
 ST **battery** polypyrrole lithium PEO **anode**;
 electrode conducting polymer composite
 IT **Anodes**
 (battery, lithium, conducting polymers containing
 ion-conductive polymers for, manufacture of)
 IT 7439-93-2, Lithium, uses
 RL: USES (Uses)
 (anodes, electropolymd. polypyrrole containing
 ion-conductive polymers for, in batteries)
 IT 14283-07-9, Lithium tetrafluoroborate (LiBF₄)
 RL: USES (Uses)
 (electrode materials from electropolymd. polymers containing
 ion-conductive polymers containing, manufacture of)
 IT 9002-98-6D, Poly(ethylenimine), lithium complexes
 24969-06-0D, Poly(epichlorohydrin), lithium complexes
 RL: USES (Uses)
 (electrode materials from electropolymd. polymers containing,
 manufacture of)
 IT 25322-68-3D, Poly(ethylene
 oxide), lithium complexes 25322-69-4D,
 Poly(propylene oxide), lithium
 complexes
 RL: USES (Uses)
 (electrodes from electropolymd. polypyrrole containing, manufacture of)

L224 ANSWER 23 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1993:39533 HCAPLUS
 DOCUMENT NUMBER: 118:39533
 TITLE: Polyether and polyimine derivatives of layered
 zirconium phosphates as supramolecules
 AUTHOR(S): Clearfield, Abraham; Ortiz-Avila, C. Yolanda
 CORPORATE SOURCE: Dep. Chem., Texas A and M Univ., College
 Station, TX, 77843, USA
 SOURCE: ACS Symposium Series (1992), 499(Supramol.
 Archit.), 178-93
 CODEN: ACSMC8; ISSN: 0097-6156
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB Polyethylene oxides and
 polyethyleneimines are of great interest because of their
 ability to form a wide variety of metal and salt complexes.
 Polyethylene oxide oligomers (n = 1-33) and

polyimines (n = 1-4) were anchored to Zr phosphate-type layers. The polymers were 1st converted to phosphates or phosphonates, which in turn reacted with Zr(IV) solns. to form the layered derivs. **Crosslinking** of the layers was also accomplished. Data on preliminary structural and complexing behavior of these layered materials were presented. It was demonstrated that the NaSCN-**polyethyleneoxide** Zr phosphate is an ionic conductor with conductivity (at 25°) of $\sim 10^{-6}/\Omega\text{-cm}$.

IT 556-65-0D, Lithium thiocyanate, reaction products with zirconium
 RL: USES (Uses)
 (complexes with **polyethylene glycol**
 phosphate-zirconium reaction products preparation and products of)
 RN 556-65-0 HCAPLUS
 CN Thiocyanic acid, lithium salt (8CI, 9CI) (CA INDEX NAME)

HS- $\text{C}\equiv\text{N}$

● Li

CC 35-6 (Chemistry of Synthetic High Polymers)
 ST **polyethylene glycol** zirconium phosphate layered
 supramol; polyimine zirconium phosphate layered deriv
 IT Electric conductivity and conduction
 (of **polyethylene glycol** phosphate-zirconium reaction
 products complex with sodium thiocyanate)
 IT Electric conductors, polymeric
 (**polyethylene glycol** phosphate-zirconium reaction
 product complex with sodium thiocyanate)
 IT Polymers, compounds
 RL: USES (Uses)
 (reaction products, **polyethylene glycol**
 phosphate-zirconium reaction products and imino group-containing
 phosphonic acid-zirconium)
 IT 7440-50-8, Copper, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (complexation and ion exchange of, on zirconium-
polyethylene glycol phosphate reaction products)
 IT 540-72-7, Sodium thiocyanate 556-65-0D, Lithium
 thiocyanate, reaction products with zirconium
 RL: USES (Uses)
 (complexes with **polyethylene glycol**
 phosphate-zirconium reaction products preparation and products of)
 IT 7440-67-7DP, Zirconium, reaction products with
polyethylene glycol phosphates and with imino group-containing
 phosphonic acids 22987-26-4DP, Ethylene glycol monomethyl ether
 monophosphate, reaction products with zirconium 25852-91-9DP,
Polyethylene glycol monophosphate, reaction products with
 zirconium 45163-42-6DP, Diethylene glycol diphosphate, reaction
 products with zirconium 52329-58-5DP, Triethylene glycol
 diphosphate, reaction products with zirconium 57569-75-2DP,

Polyethylene glycol diphosphate, reaction products with zirconium 64864-14-8DP, Diethylene glycol monophosphate, reaction products with zirconium 93904-52-0DP, Triethylene glycol monophosphate, reaction products with zirconium 145429-54-5DP, Triethylene glycol monoethyl ether monophosphate, reaction products with zirconium 145429-55-6DP, Tetraethylene glycol monophosphate, reaction products with zirconium 145429-56-7DP, Tetraethylene glycol diphosphate, reaction products with zirconium

RL: SPN (Synthetic preparation); PREP (Preparation)
(layered, preparation and reactions and properties of)

L224 ANSWER 24 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1990:182903 HCAPLUS

DOCUMENT NUMBER: 112:182903

TITLE: Secondary batteries and electrochromic display devices

INVENTOR(S): Yoneyama, Sachiko; Ohsawa, Toshiyuki; Kimura, Okitoshi; Kabata, Toshiyuki

PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan

SOURCE: Ger. Offen., 12 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO. -----	KIND ----	DATE -----	APPLICATION NO. -----	DATE
DE 3920129	A1	19891228	DE 1989-3920129	1989 0620
DE 3920129	C2	19910221		
JP 01319268	A2	19891225	JP 1988-151110	1988 0621
US 5011751	A	19910430	US 1989-369122	1989 0621
JP 02155173	A2	19900614	JP 1989-204582	1989 0809
JP 3062203	B2	20000710		
PRIORITY APPLN. INFO.:			JP 1988-151110	A 1988 0621
			JP 1988-197173	A 1988 0809

OTHER SOURCE(S): MARPAT 112:182903

AB Batteries and electrochromic display devices have ≥1 pair of electrodes sandwiching a solid polymeric electrolyte. The electrolyte contains a

salt and .apprx.0.1-50 volume% dispersed spherical ion-conductive particles of uniform size (diameter 0.1-50 μ m) and having an electron conductivity of $\leq 10^{-10}$ S/cm. The particles are made of polymers such as phenolic resins, crosslinked poly(divinylbenzene), poly(Me methacrylate, polystyrene, etc., or of inorg. materials such as crown glass, Nasicon, Lisicon, Al_2O_3 , and TiO_2 . The electrolyte salt contains BR_4^- anions, where R is alkyl, Ph, or halogen.

IT 7439-93-2, Lithium, uses and miscellaneous
RL: USES (Uses)

(anodes, in batteries with polymer electrolytes)

RN 7439-93-2 HCAPLUS

CN Lithium (7CI, 8CI, 9CI) (CA INDEX NAME)

Li

IT 25233-30-1

RL: USES (Uses)

(cathodes, in batteries with polymer electrolytes)

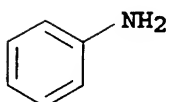
RN 25233-30-1 HCAPLUS

CN Benzenamine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62-53-3

CMF C6 H7 N



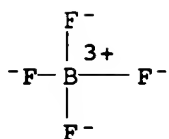
IT 14283-07-9

RL: USES (Uses)

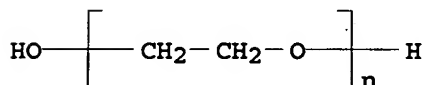
(electrolytes containing polymers and, dispersed polymer and ceramic particles in, for batteries and electrochromic devices)

RN 14283-07-9 HCAPLUS

CN Borate(1-), tetrafluoro-, lithium (8CI, 9CI) (CA INDEX NAME)

● Li⁺

- IT 25322-68-3D, triol derivs., polymers with TDI, lithium complexes
 RL: USES (Uses)
 (electrolytes, containing ceramic particles and propylene carbonate and tetrafluoroborate, for batteries)
- RN 25322-68-3 HCAPLUS
 CN Poly(oxy-1,2-ethanediyl), α -hydro- ω -hydroxy- (9CI)
 (CA INDEX NAME)



- IT 7439-93-2D, Lithium, polymer complexes
 7440-09-7D, Potassium, polymer complexes
 RL: USES (Uses)
 (electrolytes, containing ceramic particles, for batteries)
- RN 7439-93-2 HCAPLUS
 CN Lithium (7CI, 8CI, 9CI) (CA INDEX NAME)

Li

- RN 7440-09-7 HCAPLUS
 CN Potassium (8CI, 9CI) (CA INDEX NAME)

K

- IC ICM H01M006-12
 ICS H01M006-18; H01M010-38; G02F001-17; H01G009-02
- ICA C03C003-00; C04B035-10; C04B035-46; C08L023-06; C08L025-02;
 C08L033-12; C08L071-02; C08L077-00
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 Section cross-reference(s): 37, 38, 57, 74
- ST battery secondary polymer electrolyte;
 electrochromic device polymer electrolyte;

- haloborate polymer electrolyte battery;
 alkylborate polymer electrolyte battery;
 phenylborate polymer electrolyte battery;
 polymer haloborate electrolyte battery; oxide
 dispersion polymer electrolyte battery; glass
 dispersion polymer electrolyte battery
- IT Optical imaging devices
 (electrochromic, solid polymer electrolytes
 for, dispersed spherical particles- and salt-containing)
- IT Batteries, secondary
 (solid-electrolyte, polymer
 electrolytes for, dispersed spherical particles- and
 salt-containing)
- IT 7439-93-2, Lithium, uses and miscellaneous
 RL: USES (Uses)
 (anodes, in batteries with polymer
 electrolytes)
- IT 12039-13-3, Titanium sulfide (TiS₂) 25233-30-1
 30604-81-0
 RL: USES (Uses)
 (cathodes, in batteries with polymer
 electrolytes)
- IT 7440-57-5, Gold, uses and miscellaneous 50926-11-9, Indium tin
 oxide 84928-92-7
 RL: USES (Uses)
 (electrodes, in electrochromic devices with polymer
 electrolytes)
- IT 26570-48-9 152849-52-0, Micropearl SP 205
 RL: USES (Uses)
 (electrolytes containing dispersed particles of, polymer,
 for batteries)
- IT 1344-28-1, Aluminum oxide (Al₂O₃), uses and miscellaneous
 13463-67-7, Titanium oxide (TiO₂), uses and miscellaneous
 70780-99-3 77641-62-4, Nasicon
 RL: USES (Uses)
 (electrolytes containing dispersed particles of, polymer,
 for batteries and electrochromic devices)
- IT 126465-27-8, Micropearl SP 214
 RL: USES (Uses)
 (electrolytes containing dispersed particles of, polymer,
 for electrochromic devices)
- IT 7778-74-7 14283-07-9 14485-20-2
 RL: USES (Uses)
 (electrolytes containing polymers and,
 dispersed polymer and ceramic particles in, for batteries and
 electrochromic devices)
- IT 584-84-9D, polymers with polyoxyethylene triols, lithium complexes
 25322-68-3D, triol derivs., polymers with TDI, lithium
 complexes
 RL: USES (Uses)
 (electrolytes, containing ceramic particles and
 propylene carbonate and tetrafluoroborate,
 for batteries)
- IT 7439-93-2D, Lithium, polymer complexes
 7440-09-7D, Potassium, polymer complexes
 RL: USES (Uses)

(electrolytes, containing ceramic particles, for batteries)

IT 24937-79-9D, Poly(vinylidene fluoride), lithium and potassium complexes

RL: USES (Uses)

(electrolytes, containing dispersed divinylbenzene copolymer particles, for batteries and electrochromic devices)

L224 ANSWER 25 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1990:119860 HCAPLUS

DOCUMENT NUMBER: 112:119860

TITLE: Epoxy polymers with crown ether groups

AUTHOR(S): Ergozhin, E. E.; Kurmanaliev, M.; Sydykov, A. O.

CORPORATE SOURCE: Kaz. Gos. Univ., Alma-Ata, USSR

SOURCE: Izvestiya Vysshikh Uchebnykh Zavedenii, Khimiya i Khimicheskaya Tekhnologiya (1989), 32(5), 111-15

CODEN: IVUKAR; ISSN: 0579-2991

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB Epoxy polymers with crown ether groups were obtained by condensation of diaminodibenzo-18-crown-6 tetraglycidyl ether (I) with aliphatic amines and polyamines in DMF, and subsequent curing at 100-120° for 2-3 h. The resulting ion exchangers have good physicochem. properties, and can be used for selective sorption of K ions. The static exchange capacity (SEC) for alkali metal ions depends on the concentration of initial monomers and amine nature. Optimum molar ratios of I with polyethylenepolyamine, polyethylenimine, hexamethylenediamine and triethylenetetramine were 1:10, 1:20, 1:1, and 1:1, resp. The SEC of the ion exchanger was 17.3-18.8 mg/g, and remained unchanged by increasing the curing temperature from 100 to 120°, with a slight effect of the increase in condensation time to 6 h. The ion exchangers have high chemical and heat resistance in H2O, compared to EDE-10P anion exchanger. The structure of crown epoxy ion exchangers was determined by IR spectra and elemental anal.

IT 125761-06-0P 125761-07-1P 125761-08-2P

RL: SPN (Synthetic preparation); PREP (Preparation)
(ion exchangers, preparation and physicochem. properties of)

RN 125761-06-0 HCAPLUS

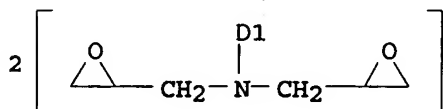
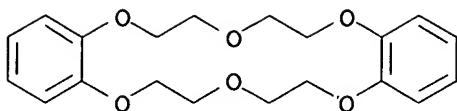
CN Dibenzo[b,k] [1,4,7,10,13,16]hexaoxacyclooctadecin-ar,ar'-diamine, 6,7,9,10,17,18,20,21-octahydro-N,N,N',N'-tetrakis(oxiranylmethyl)-, polymer with N,N'-bis(2-aminoethyl)-1,2-ethanediamine (9CI) (CA INDEX NAME)

CM 1

CRN 125659-25-8

CMF C32 H42 N2 O10

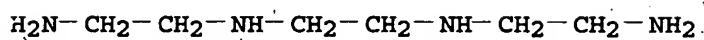
CCI IDS



CM 2

CRN 112-24-3

CMF C6 H18 N4



RN 125761-07-1 HCAPLUS

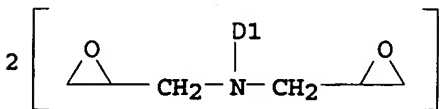
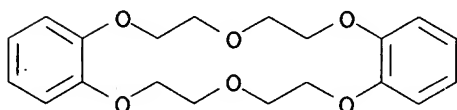
CN Dibenzo[b,k][1,4,7,10,13,16]hexaoxacyclooctadecin-ar,ar'-diamine,
6,7,9,10,17,18,20,21-octahydro-N,N,N',N'-tetrakis(oxiranylmethyl)-
, polymer with 1,6-hexanediamine (9CI) (CA INDEX NAME)

CM 1

CRN 125659-25-8

CMF C32 H42 N2 O10

CCI IDS



CM 2

CRN 124-09-4

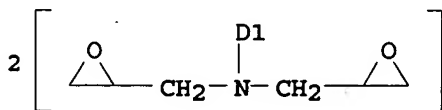
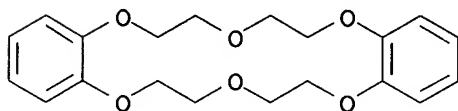
CMF C6 H16 N2



RN 125761-08-2 HCAPLUS
 CN Dibenzo[b,k][1,4,7,10,13,16]hexaoxacyclooctadecin-ar,ar'-diamine,
 6,7,9,10,17,18,20,21-octahydro-N,N,N',N'-tetrakis(oxiranylmethyl)-
 , polymer with aziridine (9CI) (CA INDEX NAME)

CM 1

CRN 125659-25-8
 CMF C32 H42 N2 O10
 CCI IDS



CM 2

CRN 151-56-4
 CMF C2 H5 N



IT 24203-36-9, Potassium ion (K+), properties
 RL: PEP (Physical, engineering or chemical process); PROC
 (Process)
 (selective sorption of, by amine-crosslinked crown ether
 group-containing epoxy ion exchangers, effect of amine structure
 on)
 RN 24203-36-9 HCAPLUS
 CN Potassium, ion (K1+) (8CI, 9CI) (CA INDEX NAME)

K+

CC 37-3 (Plastics Manufacture and Processing)
 IT Polyamines
 RL: MOA (Modifier or additive use); USES (Uses)

(polyethylene-, crosslinking agents, for crown ether group-containing epoxy resin ion exchangers)

IT 125761-06-0P 125761-07-1P 125761-08-2P

RL: SPN (Synthetic preparation); PREP (Preparation)
(ion exchangers, preparation and physicochem. properties of)

IT 24203-36-9, Potassium ion (K+), properties

RL: PEP (Physical, engineering or chemical process); PROC
(Process)

(selective sorption of, by amine-crosslinked crown ether group-containing epoxy ion exchangers, effect of amine structure on)

L224 ANSWER 26 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1980:606093 HCAPLUS

DOCUMENT NUMBER: 93:206093

TITLE: Dyeing and printing of textiles with disperse dyes

INVENTOR(S): Baumgarte, Ulrich; Oppenlaender, Knut;
Schlueter, Harald; Petersen, Harro; Greif,
Norbert; Strickler, Rainer

PATENT ASSIGNEE(S): BASF A.-G., Fed. Rep. Ger.

SOURCE: Ger. Offen., 22 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO. -----	KIND ----	DATE -----	APPLICATION NO. -----	DATE
DE 2855188	A1	19800710	DE 1978-2855188	1978 1221
EP 12935	A1	19800709	EP 1979-105107	1979 1212
EP 12935	B1	19811021		
R: AT, BE, CH, DE, FR, GB, IT, NL				
US 4239491	A	19801216	US 1979-103074	1979 1212
AT 330	E	19811115	AT 1979-105107	1979 1212
BR 7908271	A	19800722	BR 1979-8271	1979 1217
IL 58975	A1	19820831	IL 1979-58975	1979 1217
CA 1135011	A1	19821109	CA 1979-342082	1979 1217
ES 487122	A1	19800916	ES 1979-487122	1979

PRIORITY APPLN. INFO.:

DE 1978-2855188

A

1220

1978

1221

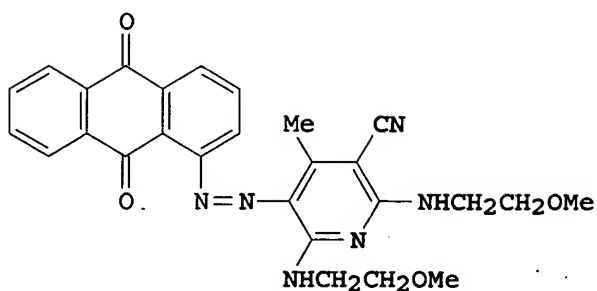
EP 1979-105107

A

1979

1212

GI



AB Swelling agent-dye solvent mixts. with reduced volatility for dyeing and printing cellulosic-polyester textiles with disperse dyes and fixing at $\leq 230^\circ$ comprise 1-99% polyethylene glycol (I) [25322-68-3] or a block polyethylenepolypropylene glycol or derivative and 1-99% of an amine-ethylene oxide adduct, containing 3-100 ethylene oxide units. Thus, a polyester-cotton textile (65:35) was impregnated with a bath of pH 6 containing 5 g/L 20% composition of II and 80 g/L composition of I and 1:16:16 (mole ratio) ethylenediamine-ethylene oxide-propylene oxide adduct [11111-34-5], dried at 120° , and fixed at 215° for 60 s to give a bright brown fast dyeing with a volatility of 7% of the mixture compared to the calculated 10%.

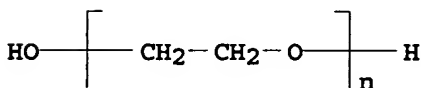
IT 25322-68-3 29933-71-9

RL: USES (Uses)

(dyeing compns. containing, with reduced volatility, for dyeing cellulosic-polyester fiber blends with disperse dyes)

RN 25322-68-3 HCAPLUS

CN Poly(oxy-1,2-ethanediyl), α -hydro- ω -hydroxy- (9CI)
(CA INDEX NAME)



RN 29933-71-9 HCAPLUS

CN 1,6-Hexanediamine, polymer with oxirane (9CI) (CA INDEX NAME)

CM 1

CRN 124-09-4
CMF C6 H16 N2

$\text{H}_2\text{N}-(\text{CH}_2)_6-\text{NH}_2$

CM 2

CRN 75-21-8
CMF C2 H4 O



IC D06P003-60; D06P001-60; D06P001-607; D06P001-613
CC 39-7 (Textiles)
ST dyeing cellulosic polyester disperse; cotton polyester disperse
dyeing; solvent swelling volatility textile
dyeing; polyethylene glycol disperse dyeing;
polypropylene glycol disperse dyeing; amine alkoxyated
disperse dyeing
IT 9004-87-9 11111-34-5 25322-68-3 27014-42-2
29933-71-9 36356-83-9 36936-60-4 39434-94-1
41347-64-2 42503-45-7 60182-11-8 60182-11-8D, saponified
75460-88-7 75460-89-8
RL: USES (Uses)
(dyeing compns. containing, with reduced volatility, for dyeing
cellulosic-polyester fiber blends with disperse dyes)

=>